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* **E**IGHTY years ago, in the summer of 1869, Robert Ridgway, a brilliant young ornithologist just past his seventeenth birthday, made a survey of the birds and vegetation of Parley's Park in the Wasatch Mountains of Utah. He was the zoologist of a government expedition which had begun in Sacramento, California, two years before, and had moved eastward along the Fortieth Parallel to end just east of Salt Lake City.

Ridgway went on from that early scientific adventure to develop and modernize systematic ornithology in America; headed the division of birds in the Smithsonian Institution for more than fifty years; and wrote more than 500 publications, the most famed of which is his monumental series, "Birds of North and Middle America." But his youthful report* on that early expedition remains one of the best of its kind and is still a valuable source of information on birds of the western United States.

* Part III Ornithology, by Robert Ridgway, 1876. "United States Geological Exploration of the Fortieth Parallel," by Clarence King, Geologist-in-Charge, Washington, D. C.

EDITOR'S NOTE: For anyone interested in Robert Ridgway's life, we recommend "A Memorial Appreciation" by Harry C. Oberholser, published in *The Auk*, April, 1933, Vol. L, No. 2, and a remarkable biography of Ridgway by Harry Harris, which takes up almost the entire issue of *The Condor*, January-February, 1928, pp. 5-118.

In this article I hope to show the greatly added interest and possible scientific results that may come from following up historical bird lists with modern ones made in the same area. For a number of years I have had the opportunity of making field trips in Utah with my friend Charles W. Lockerbie of Salt Lake City, an outstanding naturalist, especially competent in ornithology and geology. Our quest for birds has led us among the uplands and mountains of the Wasatch Range east of Salt Lake City and into the desert to the south. Mrs. Lockerbie has for many years been a devoted and competent partner on these trips.

Early in 1946, Lockerbie discovered Ridgway's report of 116 species of birds collected or observed in Parley's Park, 25 miles southeast of Salt Lake City. He immediately recognized the increased value of his own observations in that area if they were compared with Ridgway's historical survey. Lockerbie had made seven trips there before I joined him in June, 1948, when we spent three successive days studying birds on the 15 square miles of the Park at an altitude of 6,500 feet.

In our combined list of 110 species, many of which were gathered by Lockerbie and his friends on previous trips, we were able, within the Park boundaries,

*A Foot-Note to Ridgway

By Guy Emerson

To get increasing pleasure and value from your bird lists, compare them with available records made in the same area in previous years



Clark's nutcracker (photograph by M. H. Oldham), also called Clark's crow, is restless and noisy, sometimes bands together in immense flocks which rove about in search of food. It nests in the evergreens of the high mountains where, in winter, it feeds on the seeds of conifers. A young Clark's nutcracker appears on the cover.

View of Parley's Park showing part of Wasatch Mountain range.





Associated with mountains, the mountain bluebird strays to lower altitudes in winter. Also called Arctic bluebird, it is more slender than the common bluebird. Photograph by Alfred M. Bailey.

Cottonwood groves, once abundant in Ridgway's time, are now reduced to a few small stands.



to identify 83 of the 116 species seen by Ridgway. Of the remaining 33 on Ridgway's list, we saw five on a contiguous tract just outside the Park—dusky grouse, sora rail, coot, yellow-throat and yellow-headed blackbird—but there are still 28 species which we have been unable to find in the area up to this time.

BIRDS OBSERVED BY ROBERT RIDGWAY IN PARLEY'S PARK, SUMMIT COUNTY, 1869

**Indicates birds seen by Lockerbie, Emerson, et al.*

- Mallard
- Cinnamon teal
- Turkey vulture
- Sharp-shinned hawk
- Cooper's hawk
- Swainson's hawk
- Red-tailed hawk
- Ferruginous rough-legged hawk
- Golden eagle
- Marsh hawk
- Saker's falcon (Prairie)
- Sparrow hawk
- Dusky grouse
- Ruffed grouse
- Sharp-tailed grouse
- Sage grouse
- Sandhill crane
- Sora rail
- Black rail?
- (sora immature?)
- Coot
- Killdeer
- Wilson's snipe
- Long-billed curlew
- Spotted sandpiper
- Solitary sandpiper
- Willet
- Semipalmated sandpiper
- Least sandpiper
- Mourning dove
- Horned owl
- Poor-will
- Nighthawk
- Black-chinned hummingbird
- Calliope hummingbird
- Broad-tailed hummingbird
- Kingfisher
- Red-shafted flicker
- Hairy woodpecker
- Downy woodpecker
- Brown-headed sapsucker (Williamson's sapsucker)

- *Red-naped sapsucker
- *Eastern kingbird
- *Arkansas kingbird
- Ash-throated flycatcher
- *Olive-sided flycatcher
- *Western flycatcher
- *Wright's flycatcher
- *Hammond's flycatcher
- *Traill's flycatcher
- *Wood pewee
- *Horned lark
- *Violet-green swallow
- *Tree swallow
- Bank swallow
- *Rough-winged swallow
- *Barn swallow
- *Cliff swallow
- *Purple martin
- *Steller's jay
- Woodhouse's jay
- Raven
- *Clark's nutcracker
- *Mountain chickadee
- *Red-breasted nuthatch
- White-breasted nuthatch
- Pygmy nuthatch
- Creeper
- *Water ouzel
- *House wren
- Marsh wren
- *Catbird
- Robin
- *Hermit thrush
- *Olive-backed thrush
- *Mountain bluebird
- *Ruby-crowned kinglet
- *Plumbeous vireo
- *Warbling vireo
- *Orange-crowned warbler
- *Virginia's warbler
- *Audubon's warbler
- *Yellow warbler
- Black-throated gray warbler
- *Macgillivray's warbler
- Yellow-throat
- *Long-tailed chat
- Pileolated warbler
- Redstart
- *Meadowlark
- Yellow-headed blackbird
- *Red-winged blackbird
- *Brewer's blackbird
- *Bullock's oriole
- Cowbird
- *Western tanager
- *Black-headed grosbeak
- *Lazuli bunting
- Lark bunting
- *Cassin's purple finch
- House finch
- Pine siskin
- *Willow goldfinch
- Green-backed goldfinch
- *Green-tailed towhee
- *Vesper sparrow
- *Savannah sparrow
- *Lark sparrow
- *Gray-headed junco
- *Chipping sparrow
- Yellow-winged sparrow
- (grasshopper sparrow)
- *Brewer's sparrow
- White-crowned sparrow
- *Fox sparrow
- *Lincoln's sparrow
- *Song sparrow
- *Spotted towhee



Male and female Williamson's sapsuckers (female above photographed by H. D. Wheeler), once considered separate species, have disappeared from Parley's Park with the passing of large tracts of yellow and lodgepole pine.

Willow thickets and open meadows of farm land within Parley's Park.



LIST OF 28 SPECIES OF BIRDS SEEN
BY RIDGWAY AND NOT SEEN BY
LOCKERBIE, EMERSON, ET AL

Turkey vulture	White-breasted nuthatch
Prairie falcon	Pygmy nuthatch
Sharp-tailed grouse	Creeper
Sandhill crane	Marsh wren
Black rail?	Black-throated gray warbler
Long-billed curlew	Pileolated warbler
Solitary sandpiper	Redstart
Willet	Cowbird
Semipalmented sandpiper	Green-backed goldfinch
Least sandpiper	Lark bunting
Kingfisher	White-crowned sparrow
Williamson's sapsucker	Grasshopper sparrow
Ash-throated flycatcher	
Bank swallow	
Raven	
Woodhouse's jay	

It is with these missing 28 species that we face ornithological problems. Why were they in the Park in Ridgway's time, and not in our day? The area was covered in the months of June, July and August, as Ridgway had done, so that seasonal variation as a cause for the loss of species was eliminated. It is, of course, possible that some of these species seen by Ridgway, which we have not found, were rare stragglers, but it would be only a few of them at most. Hunting was not a broadly eliminating factor because only four of the 28 missing species, —sharp-tailed grouse, long-billed curlew, willet and sandhill crane,—were ever considered game birds. We turned then to habitat changes for the answer.

When Ridgway came to Parley's Park, he described it as ". . . a luxuriant meadow, parts of it under cultivation, the hillsides being covered with a thick scrub of dwarf-oaks . . . the higher slopes covered with a dense forest of Coniferae . . . The higher portions of the ravines are occupied by shady groves of tall aspens . . . bordering the lower portions of the streams grow scattered trees of narrow-leaved cottonwood . . . and luxuriant shrubbery of varied species . . ."

Ridgway was impressed with the richness of the vegetation, and of the bird fauna, which he found more numerous

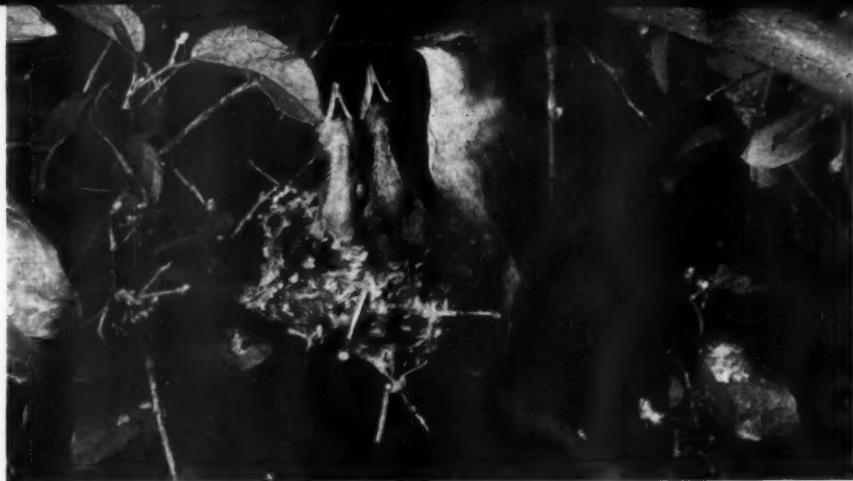
in Parley's Park than at any previous camp. He noted eastern trees and shrubs and many eastern birds there—redstart, catbird, white-crowned sparrow, and Swainson's thrush—as common as at any place in the Atlantic States. But he also recognized the natural law that certain birds are strongly associated with certain plants which constitute their environment, for he says on page 316 of his report that ". . . the distribution of the birds depends . . . upon that of vegetation . . ."

From Ridgway's description of Parley's Park we are able to compare some of the vegetational changes which may have affected its birds since that time. Most any view from a slight elevation on the north side of the valley gives an impression of vegetational luxuriance such as Ridgway described eighty years ago. But a closer examination reveals some drastic changes in the plants of the region.

Lumbering brought the first great change by practically eliminating the yellow and lodgepole pine and other large timber of the region. The limber pine remains, but being a pine of the rocky ridges it was never abundant and so never played an important role for birds, either then or now. With the passing of the tracts of yellow and lodgepole pine, we may reasonably account for our failure to find the Williamson's sapsucker and pygmy nuthatch which Ridgway had on his list.

The mountains are again heavily wooded, as in Ridgway's time, but with spruce and white fir on the lower slopes and with Douglas and black, or alpine fir on the higher slopes, interspersed with stands of quaking aspen. These trees are mostly young, closely spaced, and less than one foot in diameter.

The clearing of the land for farms and the cutting of timber for firewood and fences has reduced the cottonwood groves to two small stands. Ridgway made no specific comment on the larger stands of clump willow, common in the



Adult black-chinned hummingbird at nest, above, photographed by Eliot Porter, and young one below photographed by Donald Dickey. The black-chinned, nearest relative of the eastern ruby-throat, frequents mountain canyons and flower-covered western foothills, often occurring at high altitudes. Its nest, not decorated like the ruby-throat's, is a small yellowish ball of plants bound together with spider webs.



Formerly a resident of the once large forests of lodgepole and yellow pine in Parley's Park the pygmy nuthatch gathers in large flocks after the nesting season to forage in the pines of the high mountains.





Showiest of our North American blackbirds, the yellow-headed blackbird requires an abundant and permanent supply of water in its nesting area, congregates in vast breeding colonies, and has a remarkably unmusical song. Photograph by Wm. H. Carrick.



There is little difference between the olive-backed thrush (photographed by A. D. Cruickshank) and its western counterpart, the russet-backed thrush, of which Roger Tory Peterson's painting appears on page 102. The olive-backed thrush, has a more olive cast, with under parts a lighter buff, and grayer sides. The ranges of both birds overlap, and both are forest and thicket-dwelling species.

remaining bog areas are used for pasture.

Dairying, livestock and wheat-growing are the main types of farming in the Park. Stone is quarried in the adjoining hills. U. S. Highways 30 and 40 bring tourists to the Park, for the western portion is now a popular winter sports area.

The many small streams that wind throughout the meadows and pastures still provide suitable nesting environments for mallards and cinnamon teal that nested here in Ridgway's time, and for gadwalls, pintails, and green-winged teal which have come here since Ridgway's list was made. There are also killdeer, Wilson's snipe, and spotted sandpipers along the streams, but the long-billed curlew, willet and sandhill crane, which we were unable to find, may be gone forever from this region. Ridgway did not collect specimens of these birds so that we may infer that they were never abundant in the Park.

Coot, sora rail, yellow-throats, and yellow-headed blackbirds, which Ridg-

way saw, no longer reside in the Park, although we found them on two cattail ponds in the adjoining valley.

Grouse have declined since Ridgway's time. Although he had difficulty getting specimens of dusky and ruffed grouse, which may never have been abundant here, sharp-tailed grouse and sage hens were common. Flocks of hundreds of sage hens have been reduced to remnants and the sharp-tailed grouse is almost gone, having suffered severely from hunting and overgrazing of its grassland home.

Other eastern birds, redstart and lark bunting, have disappeared, and the redstart is now considered a rare breeding bird in northern Utah and the lark bunting accidental.

As Ridgway gives little numerical data, he may have recorded several species of birds that are rarities. Unusual species for this region occur on our own lists in the stilt sandpiper, white-throated swift, scissor-tailed flycatcher and red-eyed vireo.

The black-headed grosbeak, illustrated in color by Roger Tory Peterson on page 103, like the rose-breasted grosbeak, is an exquisite songster. It nests in thickets near water, but also frequents yards, and often nests in fruit trees. Photograph by Donald Dickey.



The absence of the magpie and sage thrasher in Ridgway's time, and now seen here commonly seems inexplicable. We have recorded 21 species of birds in the Park which Ridgway did not find. Perhaps, where they are not rarities, some of these may be replacements for Ridgway's 28 species that we have been unable to discover.

BIRDS OBSERVED BY US AND NOT RECORDED BY RIDGWAY

Gadwall	Black-capped chickadee
Pintail	Rock wren
Green-winged teal	Sage thrasher
Great blue heron	Golden-crowned kinglet
Bittern	Magpie
Stilt sandpiper	Townsend's warbler
Wilson's phalarope	English sparrow
Short-eared owl	Bobolink
White-throated swift	Evening grosbeak
California gull	Townsend's solitaire
Scissor-tailed flycatcher	

Although man's modification or elimination of vegetation may change the species of birds in an area, his influence is not always harmful. There may be larger *populations* of birds in the Park now than in Ridgway's day although we have no means of knowing this because we have no estimates of bird populations in those times. Man-created barnyards, outbuildings, grain fields and grazed pastures have doubtless encouraged more swallows, robins, mountain bluebirds, yellow warblers, Brewer's blackbirds and English sparrows. The rock wren, a newcomer since Ridgway, has established itself in abandoned quarries and quarry dumps, and bobolinks and Wilson's phalaropes, unknown here 80 years ago, now populate the farmed meadow lands.

It is not always easy to evaluate the causes for the changing distribution of birds. Some of the factors work subtly over a long period of time. Ludlow Griscom and Edith Folger in their admirable, "Birds of Nantucket,"* show the effect of environment upon the birds of

an island through a long cycle. Their work also proves the scientific value and interest of modern bird lists made in areas where historical comparisons over a substantial period can be made.

Bird people may find old records in their local libraries covering earlier observations in their territories. Besides the lists made by naturalists of an older day, there are the *Audubon Field Notes* and seasonal records of migrant and nesting birds published since the May-June 1917 issue when *Audubon Magazine* was known as *Bird-Lore*. These may serve as a basis for the study of changing distribution of species.

Often a bird trip results in a list which may be notable for numbers of species, total individuals, or rarities. Much can be added to the interest of the trip if one does a small bit of research beforehand, taking along records of previous trips in the same, or similar areas, on corresponding dates in earlier years. These, compared with present-day lists, may show striking changes in bird species and stimulate studies of the factors responsible for the changes.

We like to feel that we are maturing in our bird work in the way that Roger Tory Peterson suggests on page 20 of his "Birds Over America." Peterson says, "If you are a thoughtful person, you will probably graduate from Christmas counts to breeding-bird censuses, and from there on to life histories, or studies of song, territory, or whatever strikes your fancy. The exact requirements of many birds—their ecology—is still not well known. Nor do we know too much about plant succession and just what happens to the birds when the plants change . . ."

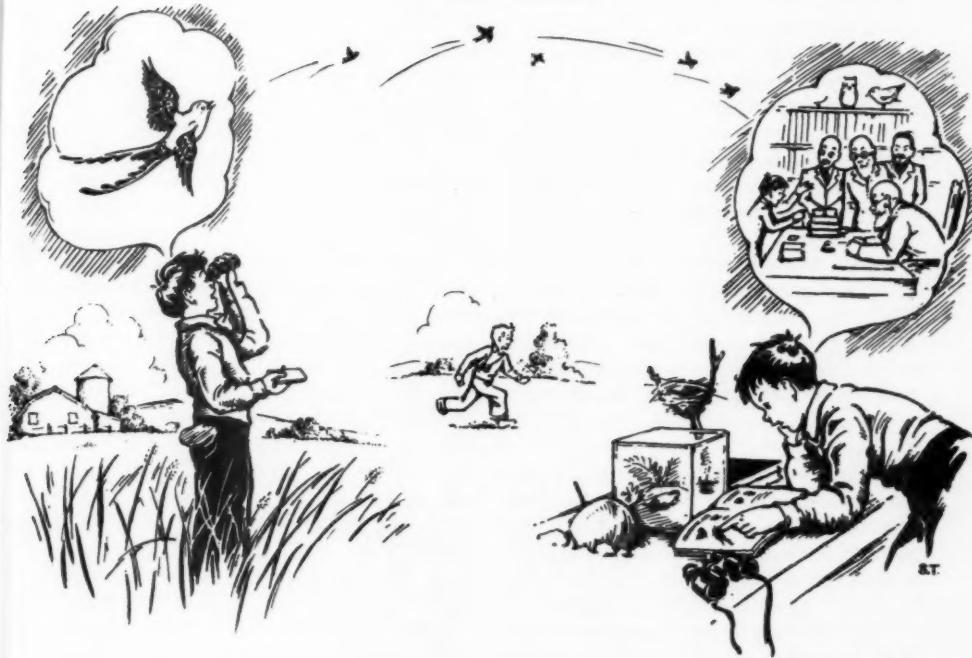
We believe that our field work on an area once worked by Robert Ridgway tends in the direction of something more than compiling a list of birds. This kind of effort can lead to the broader fields of ecology and to the fascinating problems of our ever-changing bird distribution.

* "Birds of Nantucket," by Ludlow Griscom and Edith V. Folger, Harvard University Press, Cambridge, Mass., 1948. \$3.50.

THE BIRDS I USED TO SEE

This article will surely remind you of some of your own early bird experiences.

By Alan Devoe



Drawings by Sally Tate

MY grandfather, who lived to be ninety-two, used to spend a good deal of time in his later years complaining bitterly of the fact that people no longer spoke up so that a body could hear what they were saying. In his

young days, it seems, people had been perfectly audible; but now they had taken to mumbling and practically whispering, so that he could scarcely catch a word. It used to annoy and puzzle the old gentleman immensely.

I feel the same way about what has happened to the birds I used to see.

Back in the glorious early days of my life as a bird-enthusiast, it used to be nothing at all for me to go for a short walk, in the countryside within twenty miles of New York City, and easily see a scissor-tailed flycatcher or perhaps a chestnut-collared longspur. Prowling the fields and thickets with boyhood's rapt attentiveness, I was constantly coming upon some bird that was obviously no common species but must be a great ornithological rarity. Perhaps (who could be sure?) it might be a species hitherto unknown. And so I would watch very closely, through my binoculars, and I would note every detail of coloring and feathering and eye-ring or eye-stripe or throat-patch and all the rest of it; and I would put it all tremulously down in my field notebook. Then, at home in the evening, there would be the magical delight of thumbing through Chester A. Reed's "Bird Guide," in search of the identity of the bird I had seen. And presently—sure enough!—there it would be. A scissor-tailed flycatcher, to the life. Unmistakable. There would be a fresh excitement in going out for the next bird-walk, for there was always a chance that a similar piece of good luck might come my way again. Indeed it virtually always did.

There were *birds* in those days, I tell you. A zealous young ornithologist could look out of the window on almost any propitious winter day and perceive, stuffing itself with seeds at his bird-feeder, a gray-crowned leucosticte. (I understand there is an absurd movement afoot nowadays to have this bird called simply the gray-crowned rosy finch, but I want nothing to do with this prosy modernism. Chester A. Reed, in my beloved 1909 edition of his "Bird Guide," said that the bird's name is leucosticte, and that is what I say its name is.) There used to be a small area of woods a mile or two from where I lived in the

days of my boyhood ornithologizing. I don't suppose these woods were more than ten or twelve acres in extent, but they were able to produce more than one Acadian sparrow, innumerable warblers of such striking kinds as the cerulean and the prothonotary, and, on one forever-memorable morning, a pyrrhuloxia. I remember the exact spot where the pyrrhuloxia presented itself to me, startling and fascinating me so exceedingly that I could scarcely keep my binoculars focused on the bird. I remember, too, the renewal of excitement in the evening, after I had identified my specimen in Mr. Reed's pages, when I was able to record in my notebook that I was probably one of the very few observers who had ever seen a pyrrhuloxia elsewhere than in southern Texas, Arizona, or Mexico. Those were the areas, Mr. Reed said, in which the bird ordinarily might be found.

And so it went, all during the days of my first burning enthusiasm for ornithology. My hikes and huntins were done in a glorious cloud of dickcissels, paraques, and Sprague pipits. There was some *fun* in being a bird-man in those days. Not only fun, but a sense of high scientific achievement and discovery. For in those days not only were the rarest specimens of our native avifauna discoverable by a sharp watcher, and the western and mid-western species given to turning up excitingly in the east, but also there was a wonderfully high incidence in this country of foreign "strays" (as Mr. Reed called them). The Greenland wheatear, for instance, often used to show up in my territory. I never found its nest (made, surprisingly enough, according to Mr. Reed, of "any rubbish obtainable"), but I often saw the bird itself feeding in the snow in my yard. It had a remarkable resemblance to one of our own common winter birds, such as perhaps the junco or the tree sparrow, but of course I could tell the difference. Any enthusiastic young ornithologist could. Then

again, I remember, there used to be the occurrence of European goldfinches and Lapland jays. The Lapland jay was distinguishable from the Canada jay, which has a more southerly range, by the fact that "the black on the head is deeper." These were the "Bird Guide's" words. I cannot recall that, as a young man, they ever gave me any trouble.

Well, as I say, that is the way things used to be. By my late teens, as I recall it, there was already a certain slight dwindling and dulling in our bird-life; but it was nothing sufficient to give an ornithologist any real dismay. The dismay did not start until a few years later. By the time I had reached my majority, I had decided pretty clearly that what I wanted to be was a writer-naturalist. And so, not very long afterwards, I moved to an old farmstead, way out in the country, where I could have a piece of land that would serve me

permanently as a sort of living laboratory, and I settled down to watch it closely.

I have been watching it ever since. With my fortieth birthday coming up, I continue to go out daily, with the binoculars slung around my neck, and prowl through the hemlock woods and across the open upland fields and down along the winding brook, looking for birds. Never once, by any chance, does a pyrrhuloxia pop up. In all the great sweep of the meadow, no wheatear sounds its cry, tinkling with the icy music of Greenland. The Labrador jay, its head a blacker black than that of the Canada jay, avoids my acres utterly. Oh, I find a lot of birds, of course. But all so commonplace, so predictable, so—if I may thus express it—so *native*. I love my phoebes and barn swallows dearly, and have been happy in making intimate studies of their lives in the way in which I used to promise myself I would some day study birds, but still, somehow, bird-study is not the adventure that it used to be. It isn't like the old days when the European goldfinch used to be so much commoner than it is now. I have an ideal farm here for European goldfinches, but they just don't come. I don't know where all the paroques can have gone, but they have certainly gone somewhere. I see a lot of birds these days; I can't complain of their quantity. But what a carload of them I would trade for the blazing excitement of seeing just one chestnut-collared longspur. Just *one* would content me. When I was starting out in ornithology, they used to be as thick as the flying autumn leaves.

Where are the birds I used to see? Could it be—could it just possibly be—that they have gone where the days of my youth have gone? No; it is too sad a thing to think about; I cannot admit it. I prefer to think that the trouble is just that many years ago I lost my copy of the 1909 edition of the "Bird Guide" by Chester A. Reed.



By Roger Baldwin

IF all the effort expended in the United States for conserving our natural resources seems to yield discouragingly slow and meager results, there is at least one place under U. S. jurisdiction where efforts are rewarded by quick and substantial achievement. That place is Japan under our military Occupation. Conservation there is vital to the economic recovery of a people who are cost-

ing American taxpayers over a million dollars a day, mostly to make up their food deficit on mere subsistence rations. It is little wonder therefore that one of the key sections of the Occupation is that dealing with natural resources, from underground coal and ores to soil, water, forests, fisheries and wildlife.

Some American visitor said of the Japanese that they are God's gift to an Occupation; they will do anything you tell them to do. My observations in a few months among them as an invited consultant on civil liberties did not bear

Where Trees Are Venerated

On a recent visit to Japan, the author, director of the Civil Liberties Union, discovered a land where soil, water and forest conservation really works



the conclusion that they are so passively obedient to authority. Rather they seemed to accept the Occupation and its program as honestly and ably carrying out its declared intention to create a self-supporting, peaceful and democratic Japan, and therefore to lend it willing, even enthusiastic support.

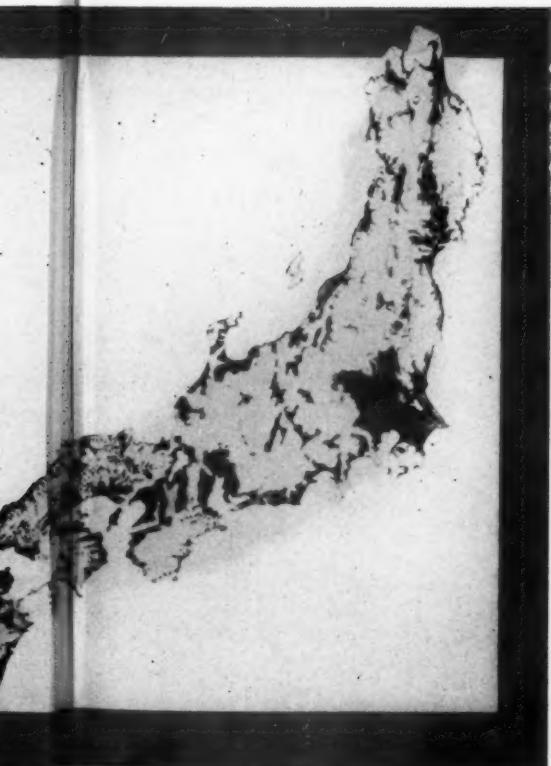
Since land and wood—and to less degree fisheries—are the basis of Japan's natural resources, the principle of sustained yield so emphasized by the Occupation experts has been at once understood and accepted. But, as we know

from American experience, it is not unusual to deny in practice what we accept in principle. While in Japan practice is not yet squared with principle, I venture the conclusion that in the three short years of Occupation it has come nearer it in conservation than anywhere in the world.

The reasons for such a rate of progress do not all favor the Occupation. The Japanese have by necessity practiced conservation of soil, water and forests for centuries. The four islands, about as big together as California, but with less than a fifth of the area arable, supported 30 million people for years under an agricultural economy. Industrialism, in less than a century, has upped the population almost to 80 million and required both huge food imports and intensive agriculture to sustain it. Now with foreign trade bankrupt after war, markets and imports cut off, industrial production down to 40 per cent of pre-war, the problem of using every possible resource is imperative. Therefore what the Occupation conservationists want and what the Japanese themselves want are dictated by necessity.

Fortunately the management of the resources of Japan in the past has left the islands with its basic natural capital productive. Unlike other oriental countries the soil is not eroded, the forests are not cut off, and fisheries have not been too seriously exploited. The impression you get of Japan is of an extraordinarily well-organized use of the land, groomed, efficient, and beautiful. Two-thirds is forested mountains, one third rich valleys and coastal plains. The picturesque tile-roof villages show no signs of war. Only in the great cities is the war damage distressingly evident—whole sections of the wooden homes and shops burned out to barren rubble. But even in those areas the thrifty and industrious Japanese grow their patches of wheat and vegetables wherever they can clear ground. Almost every yard around city homes is planted to wheat

The four islands of Japan—about the size of California—for many years supported 30 million people under an agricultural economy. (Dark areas on map are arable land, lighter ones are forests and other lands. Map, courtesy of *Fortune Magazine*. Photograph, Japan Tourist Bureau.



right up to the door. To my inquiry "Why such effort on so tiny a plot?" one man replied, "Well, we get a quarter-barrel wheat out of that, and that keeps my family two weeks."

Japan is still a tourist land of picturesque beauty, and it is largely due to the Japanese love of beauty that so much of the country looks unspoiled, quite unlike continental Asia. A mountain, says a Japanese phrase much quoted, should be honored not for its height but for its trees. When forests are cut, they are at once replanted. Any view of a Japanese mountain reveals the strips of the plantings. Wood is basic to Japan's economy. Ninety-nine per cent of all buildings are made of wood; most ships are made of it and, of course, paper and rayon. Charcoal is the universal home heat; it is the motive fuel for many motor cars and busses. Demand for wood to rebuild devastated areas is

unprecedented. It is not surprising therefore that though two-thirds of Japan is forested, the annual cut is now twice the annual growth, as with us. Reforestation and reclamation of waste land are two of the major planks actively carried out in the Occupation-Japanese co-operative platform.

Trees are venerated as well as used. A Japanese city or suburban garden is not, as with us, an affair of lawn and flower beds, bordered by shrubs. It is a daring replica of a choice bit of forest glade, with pines and maples and boulders, a pool or a brook or a spring (piped in, of course), all studiously natural. Even wood-cutters love the beauty of trees. I happened on a group of them clearing a steep hillside, but they had left a line of pines along a ridge running down the hill. When I asked why, they said, "Because they look so beautiful against the sky." The spring cherry-tree

A striking impression one gets of Japan is of an extraordinarily well-organized use of the land—groomed, efficient, and beautiful. A terraced rice field in a valley near Yokohama is shown below.



festivals bring out vast hordes just to look at beauty.

A tree-worshiping people is a solid foundation for conservation in its basic living resource. They control fires; they regulate cutting; they take pride in communal ownership. Over half of all forest land in Japan is nationally or communally owned, and the rest of it in private ownership is regulated, as it is in all the major forested countries of the world, except the United States. What the American conservationists in the Occupation have insisted on as national policy only reinforces on a larger scale what the Japanese have long accepted as sound principle.

Commercialism and the pressure of exploitation of natural resources for private profit have not made the inroads in Japan that they have in the United States. The public interest as against private tends to dominate even in an

economy which developed western industrialism under vast private monopolies. You see no evidences of realtors; no billboards; no industrial river pollution; no coastal oil discharges; no depletion of underground water; no grazing of cattle in forest lands (livestock is a minor industry). Esthetics, as well as traditional community controls, doubtless figure as restraint. To Americans, developing a conservation program on such an unfamiliar background, the prospects of achievement are obviously heartening.

But what can be said so encouragingly of soil, water and forests cannot be said of wildlife. The report of the Natural Resources Section states that "all wildlife in Japan is in a critical state due to heedless exploitation in World War II." Birds and other animals are both food resources, and the shortages during and since the war have made the pres-

The public interest tends to dominate—you see no evidence of realtors; no billboards; no industrial river-pollution; no coastal oil discharges; no grazing of cattle in forest lands. Photographs by U. S. Army.



sure devastating. Many species of economic and scientific value are in danger of extermination. New insect epidemics, says the report, attest to the inroads on the bird population. All sorts of song birds were marketed until the Occupation authorities persuaded the Japanese to put a stop to it. Birds were caught by liming and a unique Japanese device known as "mist netting," consisting of black silk nets ten to fifteen feet high raised on poles against which flying birds struck, falling into loose folds of the nets from which they could not escape. Such methods secured small birds by the thousands. One village alone had a proud record before the war of sending 500 barrels of pickled thrushes to market annually.

Liming, mist netting, and trapping are now banned, thanks to Occupation pressure. So is spring shooting. Game laws, which never were conceived in terms of sustained yield, have been revised in line with American principles and practice. The list of game species, bag limits, hours and methods of take, read much like our own. Though enforcement of the new laws is said to be lax, hunting pressure is far less than

with us. Professional hunters are half the number of twenty years ago (100,000 today) and according to the Section's report, "none can make a living at it," due, of course, to the depletion of game. Commercial marketing is still permitted, but you see very few of the permitted game in Japanese markets. Sportsmen do not add much to the take of the game. Hunting is expensive, and Japan is poor. Private property is closed to them, and public hunting grounds are not numerous.

The same distorted balance of nature that affects bird life has affected other animals. Resources were so depleted by war-time hunting for food and fur that all wild animals became scarce. Strict regulation now protects all species, with a completely closed season on otter, wild pigs and monkeys, and bag limits on deer and bear. It is unusual to see any wild animal along the country roads in Japan, far less usual than in the United States.

Bird life, contrary to the statistics, appears abundant in Japan—in city, town and countryside alike. The deceptiveness of the spring and early summer season when I was there, with the migra-

A mountain, says a Japanese proverb, should be honored, not for its height, but for its trees. When forests are cut they are at once replanted for wood which is basic to Japan's economy.



tion and activity of nesting birds, probably accounted for an appearance not based on the comparative figures of government reports. Thrushes and finches nest in city parks and gardens; white herons dot the rice paddies; cranes are frequently seen flying overhead; wild ducks nest in the Imperial Park in the center of Tokyo; crows are noisily ubiquitous; gulls and terns flock in the harbors; black kites are frequent along the coast. Japanese birds, like Japanese trees, shrubs, flowers and ferns and mosses, look almost identical with ours along the Atlantic coast. The climate is much the same, and the adaptation of species therefore natural, as is evident in the exchange of so many Japanese and American plants. Any American outdoors observer feels at home at once. Even Japanese beetles have a disagreeably familiar association.

American Occupation efforts to organize conservation, while meeting ready acceptance, do not apparently find support in volunteer citizens' agencies as with us. No pressures are discernible from any "Friends of the Land" (all Japanese are friends of the land) or an Izaak Walton League or an Audubon

Society or Garden Clubs. Japanese organize countless associations, but pressures on government from a "sovereign people" are contrary to their authoritarian tradition. Scientific societies abound; research and experiment stations are soundly backed; some wildlife sanctuaries have been established.

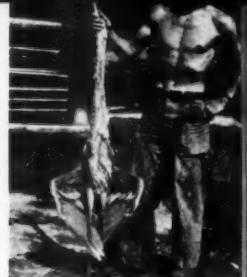
The government takes the lead in conservation as with us, through its agriculture, forestry and fisheries departments. But like all other government functions under a military occupation, the hand of the Americans exercises in the background a gently persuasive pressure. And since the Japanese, like the Americans, aim at the speediest possible development of a self-supporting economy, measures of conservation are adopted and reasonably well enforced, without the debate, compromise and resistance which beset us in the United States.

The evidence tends to indicate that with its traditional habits of land use, forest and fish culture, Japan may not only restore its wildlife resources but take the lead, with expert American guidance, among the nations in an all-around program of sustained yield from all its natural resources.

A tree-worshiping people is a solid foundation for the conservation of its natural resources. The Japanese control fires, regulate cutting, and take communal pride in the administration of their forests. Photographs by U. S. Army.

Even in the war-torn areas the Japanese grow their patches of wheat and vegetables wherever they can clear ground.

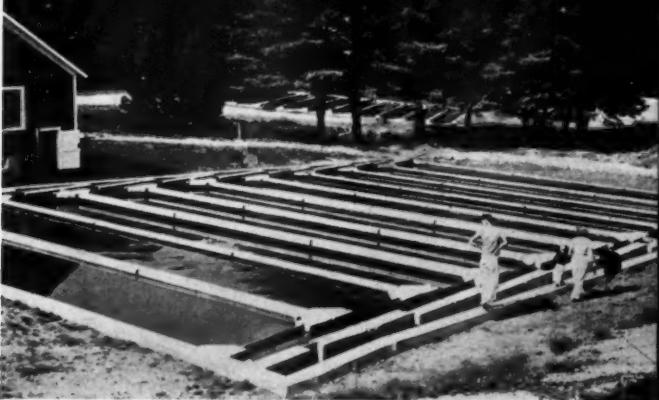




Whose FISH is it?

Photograph of young black-crowned night heron by Harry R. Boys—other photographs by the author





The old conflict between fish-eating birds and the men who manage fish hatcheries breaks down in the light of new knowledge

By Richard H. Pough

Substance of remarks made by the author
at the recent Atlantic City meeting of
the American Fisheries Society

SINCE ancient times, fishermen throughout the world have nursed a grudge against fish-eating birds. In our own country the record reveals frequent conflicts between men and birds such as cormorants, terns, pelicans, herons, kingfishers and ospreys.

Investigation after investigation gradually has built up evidence in favor of the birds, for fish are prolific, and birds and other predators must reduce the tremendous populations of young, if a particular aquatic environment is to contain a normal population of adult fish; that is, a population in balance with the carrying capacity.

In the water, as on land, the plant base supports the entire animal community, since plant-eaters are the food of the meat-eaters. The environment, therefore, can supply the food necessary for normal growth to only a limited number of individuals. As young fish grow, and their individual food requirements increase, there should be enough predation, or other causes of mortality, to progressively reduce the total population, so that its members will maintain a rapid growth rate throughout their period of development.



Small screen frames laid across raceways are effective but costly in labor as they must be removed almost daily for such work as cleaning and feeding.

A full overhead cage was not costly even for this large, circular pool and stopped heavy losses of trout fry to kingfishers.



The most modern design calls for compact, multiple units that cost relatively little to screen at the time of their original construction.



Of course, many fishing waters have been ruined by pollution of one kind or another, but even where this has not occurred, there is often a lack of good fishing. The problem in many such waters is that there are not enough predators to thin out the small fish fast enough to keep the population from crowding the food supply. Sometimes the growth rate is simply reduced but often the over-crowding becomes so bad that growth virtually stops. Lake after lake in thickly settled areas where predators are scarce is full of runts that may never reach catchable size before they literally die of old age.

What are the predators that perform this important function? Some are fish, such as bass; water snakes take some fish; and birds are very important, especially since they can wander from place to place, concentrating where fish populations are most congested and easiest to obtain.

The trained technician, who manages an aquatic environment in an effort to produce more fish, welcomes the fish-eating birds. However, this kind of management is still done on a very small scale, by private lake owners here and there. This kind of management has not yet been adopted on a scale sufficiently large to have any effect on making better fishing for the general public.

Before the techniques of fertilizing and otherwise managing the aquatic environment were developed, the fish hatchery came into being in response to the public's demand that something be done to improve fishing. Instead of studying the environment, the existing population and carrying capacities, millions of fry were poured into waters where a good thinning would have done far more good. The fish hatchery had a great vogue and thousands of dollars were invested in them.

However, as our knowledge of aquatic biology has increased, more and more of the hatcheries devoted to the rearing of such prolific, fast-growing, warm-water

fish as bass, perch, bluegill and other sunfish have been closed and the remaining ones are largely confining their activities to providing fish for stocking new waters, such as farm fish ponds and reservoirs.

On the other hand, cold-water fish hatcheries have continued to expand, as the maximum fish-growing potential of the average trout stream is far below what it would have to be to satisfy the demands of the ever-increasing army of fishermen. In frank recognition of this, hatchery trout are now reared to legal size and stocked into heavily fished streams just before or during the open season. Trout fishing in many a stream today is almost wholly dependent on the presence of vast numbers of hatchery-reared trout that need no more than a temporary home for a few days until some fisherman removes them. Under such conditions and at hatcheries where the fish are produced, the fish-eating birds—so necessary to an orderly functioning of the natural aquatic production line—are a nuisance.

In hatcheries for rearing cold-water fish like trout and salmon, the fish are fed on an expensive meat diet, and the loss of even a few individuals is a serious matter. Furthermore, the pools in which fish of this type are reared are narrow and the water is generally shallow and clear, making the fish all the easier to catch.

At such establishments as continue to be maintained for the production of warm-water fish such as bass, perch and sunfish, the losses to birds are not serious. Here the fish are fed indirectly by fertilizing the water, and as a result, production costs per fish are low. The vulnerability of the fish in these establishments is also low. The ponds are large, which means that most of the fish population is beyond the reach of herons and other waders that must work from the bank. In addition, the water of a properly fertilized pond is so clouded by the minute algae plants that constitute



A cage of parallel wires completely stopped heavy fish losses to herons from this secluded raceway.

These widely spaced wires gave a valuable brood stock of trout full protection from ospreys.



This simple screening job proved very effective for this semi-wild rearing pool.



FOR A CHEAP 12 FOOT WIDTH SINGLE CAGE TO COVER A SINGLE 100-FOOT RACEWAY.

12—8 foot timber posts @ \$1.00 each—total	\$12.00
6—30 foot length 7 strand galvanized cable @ 3.8¢ per foot	6.84
2—125 foot length 7 strand galvanized cable @ 3.8¢ per foot	9.50
8—turnbuckles and clips @ \$.62 and \$.15	6.16
16—1" x 30" used pipe anchors	.80
3—rolls 2" mesh 20 gage 6 foot wide 150 foot long galvanized after, hexagonal netting at \$7.40 per roll	22.20
500 rings	2.00
	\$59.50

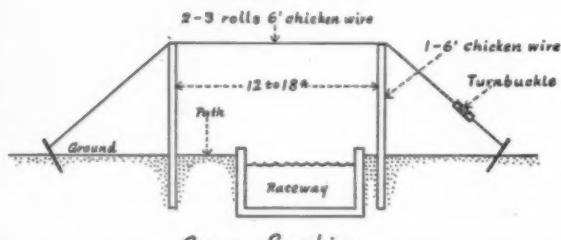
the basic food supply that the fish themselves are seldom visible.

During the 1930's, reports became frequent of heavy killing of fish-eating birds at some of the fish hatcheries, especially those for cold-water fish. By 1939, the decline of certain species like the kingfisher and osprey had become so apparent in certain areas that the National Audubon Society undertook a survey. The area chosen for this study was the Northeast, and 206 federal, state and private fish hatcheries and rearing stations were visited and a full report published in *Bird-Lore*.* This revealed that the minimum kill at these establishments

* "Blue Herons Can't Read," Nov.-Dec. issue, 1940. The name *Bird-Lore* was changed to *Audubon Magazine* beginning with Jan.-Feb. issue, 1941.

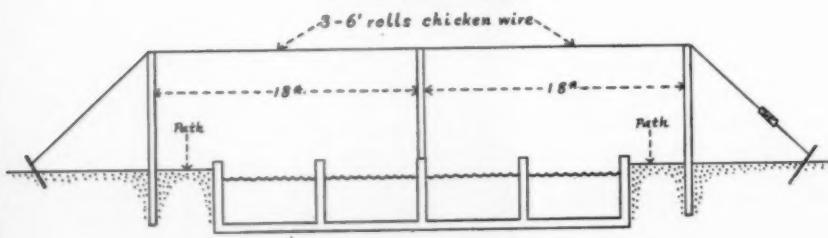
SCREENING THE RACEWAY

Full overhead single



Cross Section

Full overhead multiple



Cross Section

Screening for the exclusion of all avian fish-eaters calls for a $1\frac{1}{2}$ or 2 inch mesh hexagonal netting cage which clears the water and path used for feeding, cleaning, etc., by at least six feet. This can be supported by eight foot posts every 20 feet, or closer, if desired, along each side. Across these are stretched 2 sets of galvanized steel wire cables which are provided with turnbuckles and anchored at each end to pipes driven into the ground. The cables spanning the raceway are made to carry rolls of chicken wire laid across them parallel to the raceways and fastened to the cables with rings. The cables running at right angles to them, parallel to the raceways have chiefly the side netting to carry. Such a screening job today would cost from \$60.00 to \$105.00 per hundred feet for materials (see schedule) or a total of \$6.00 to \$10.00 per year for the ten years of its minimum life.

during the preceding year amounted to some 5,000 kingfishers, over 1,000 night herons and almost 1,000 great blue herons. Although the kill of ospreys was no longer more than a hundred to two hundred a year, the study indicated a decline of at least 75 per cent in the numbers of this species visiting hatcheries during the course of their spring and fall migration through the region.

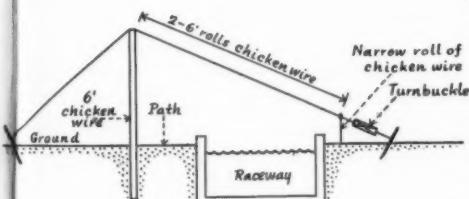
Our recommendations at that time were that cold-water hatcheries and rearing pools be screened and that all outstanding permits to kill fish-eating birds at hatcheries be withdrawn.

Some progress was made along this line but received a serious setback during the war because of scarcity of screening ma-

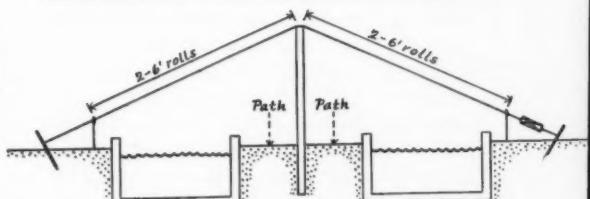
FOR A LONG-LIFE, FINE MESH CAGE THAT WILL COMPLETELY EXCLUDE KINGFISHERS* AND SMALL BIRDS.

12—8 foot 2 inch (2 $\frac{1}{2}$ outside) galvanized pipe supports @ \$2.80	\$ 33.60
12—pails of concrete to set posts	2.00
6—30 foot length 7 strand galvanized cable @ 3.8¢ per foot	6.84
2—125 foot length 7 strand galvanized cable @ 3.8¢ per foot	9.50
8—turnbuckles and clips @ \$.62 and \$.15	6.16
16—1" x 30" used pipe anchors	.80
3—rolls 1 $\frac{1}{2}$ " mesh 18 gage 6 foot wide, 150 foot length galvanized after hexagonal netting at \$14.50 each	43.50
500 rings	2.00
	\$104.40

* An occasional kingfisher will force its way through 2 inch mesh chicken wire or become wedged in the netting.



*Cross Section
Sloping overhead single*

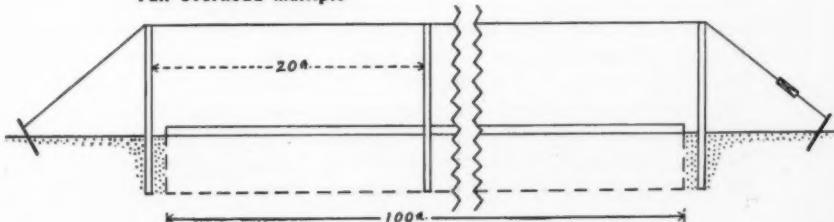


*Cross Section
Sloping overhead double*

The better and more permanent job calls for 1 $\frac{1}{2}$ inch netting and 2 $\frac{1}{2}$ inch outside diameter galvanized iron pipe supports imbedded in concrete which in many cases can be the raceway walls themselves, especially if the screening is done at the time of the original construction.

Another design that has proved effective where a six foot clearance of the raceway is not necessary, is to place upright supports only on the path sides of the raceway and use a cable or timber sloping to the ground on the far side to carry the top of the cage.

Full overhead multiple



Side View

terials, and through lack of appropriation to buy the materials when and if available. During the past seven or eight years the fish culturist has, for the most part, become converted to screening. Not only because public sentiment in favor of birds has convinced him that his warfare on birds is unpopular, but he has learned that shooting birds is not the cure. The hours of work required to try to control by shooting are considerable and expensive. Furthermore, even the most efficient shooting control does not prevent unaccountable losses (largely produced by birds) that run anywhere from 5 to 20 per cent of the establishment's output. Add to this the devastation which may result when birds introduce some virulent fish disease, and the annual losses at any unscreened hatchery are considerable. Another very serious loss, seldom appreciated, is that fish do not grow when they are too scared to feed properly. Often, only a few catches out of a pool will put the fish "off their feed" for a week, with resultant loss of growth and often waste of food.

In 1947, as the representative of the National Audubon Society, I again conducted a survey, this time to check on the amount of progress that had been made. I saw many different types of screens and heard the pros and cons of each. The men in charge of the few fully-screened establishments were unanimous in their opinion that it paid. Superintendents at other establishments expressed the wish that they might be given the money with which to do a complete screening job.

In rearing cold-water fish the modern trend is in the direction of narrow pools with a good flow of water. They absorb less heat by offering less surface to the sun and air, and water temperature rise is often a limiting factor. If construction is of concrete, which is rapidly becoming the accepted standard, the additional cost for screening is very small; in terms of cost per pound of fish reared or feet of raceway built, it costs no more to

screen a large hatchery than a small one.

The only screening that, in my opinion, is satisfactory for cold-water establishments is the overhead type. The exact design will vary with the character of the construction of the raceways, and in the case of multiple groups with common center walls, such as are now coming into use so widely, the cost is reduced to a minimum.

Once the fish are too large to be bothered by kingfishers, thin galvanized iron wires parallel to the pools can be substituted for the more expensive hexagonal netting, except for the lower sides. A full hexagonal netting cage will, however, not only keep the birds out, but it virtually eliminates the leaf problem on windy fall days and reduces the danger of any predation, including human.

Furthermore, if the water temperature has a tendency to rise too high in summer, it becomes very easy to shade the pool with strips of inexpensive tobacco cloth laid over the top just for the summer. I have seen hatcheries where this feature alone would have justified the screening as it would largely have eliminated their heavy summer losses.

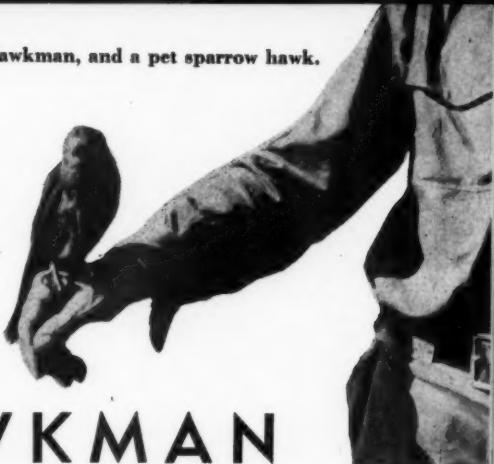
In the maintenance of these cages there is one absolutely necessary precaution—a night-watchman must be on duty on those few nights of the year when a heavy fall of sticky snow or ice might accumulate on the wires to a destructive degree. A sharp blow with a stick at intervals will dislodge any accumulation of snow or ice and I know of no case where a cage has fallen, except where those in charge were negligent.

One thing seems certain, we need more fish-eating birds, not fewer, and we cannot have them as long as we continue to lure them in great numbers to fish hatcheries and then kill them. It is also quite apparent that as long as the present high cost of meat continues more fish can be produced per dollar spent by screening our unscreened hatcheries and stopping present losses than by putting the money into food.

Laurel Van Camp, the Hawkman, and a pet sparrow hawk.



Laurel Van Camp
Persuades the
Citizens of Ohio to
Respect Hawks
and Owls



HAWKMAN

By Richard Stuart Phillips

THE dead top of the towering elm swayed gently beneath us, and the platform upon which we rested moved perceptibly. A few feet below, a cloud of green leaves billowed out from the still-living portion of the tree; the margins of the individual leaves bore ruffs of dewdrops that caught and threw back the ruddy brilliance of the rising sun. Off to the left of us, and hidden in a fence row, a catbird called petulantly, while far back in the dark woods a hermit thrush piped the haunting, hollow, flutelike notes of its matinal song. I turned my head sideways, the better to catch the faint opening of the next run of notes when a sudden jab in the ribs from the Hawkman's elbow and a sharply spoken "now," brought me back to the business of the day, and I pressed the trigger of the camera.

Laurel Van Camp, the Hawkman of Genoa, Ohio, and I were sitting in a tree blind that had been erected only a week before by Karl Maslowski, Audubon Screen Tour Lecturer. Four feet in front of us and a little below the level of our platform a young but fully-fledged great-horned owl crouched in the dead and hollowed trunk of a neighboring tree. He was attempting to frighten us away by alternately hissing, snapping his mandibles together, and

raising his wings in a threatening gesture. I had told Laurel that we would descend as soon as I had snapped a picture of the owlet with its wings raised. That was the reason for the jab from his elbow.

I had met Laurel Van Camp three years before, during the spring bird count of the Toledo Naturalists' Association. At that time I asked if I might accompany him on one of his owl- and hawk-banding expeditions. He had consented but it had taken all of three years before we could strike upon a convenient date.

In his community of Genoa, Ohio, Van Camp goes by the title of "Hawkman," which he has justly earned, being one of the foremost banders of birds of prey in the United States and, consequently, in the world. He became interested in bird-banding in 1941 through his close friend, Louis W. Campbell, nature columnist and conservation enthusiast of Toledo, Ohio. During the last seven years (up to August, 1948) he has banded well over a thousand predatory birds, among them: 430 screech owls; 157 Cooper's hawks; 72 red-tailed hawks; 86 sparrow hawks; 72 turkey vultures; 66 barn owls; 55 great-horned owls; 32 marsh hawks; and 7 American eagles. The remainder of the

total number of species is composed of red-shouldered hawks, snowy owls, sharp-shinned hawks, and barred owls. He has also banded great blue and black-crowned night herons, green herons, crows, American egrets, and herring gulls. Last summer he banded 103 herons of mixed species.

At one time in his life the Hawkman was a confirmed "vermin" hunter. He had fallen victim to the gossip and old wives' tales of many of those "experts" who never saw a hawk except through the sights of a rifle. For several years he relentlessly pursued and destroyed birds of prey in the firm belief that he was performing a service to farmers and sportsmen.

One day he picked up the shot-torn carcass of a red-tailed hawk that he had just dropped from a tree. As he turned it over he noticed that the stomach had been ripped open and he peered into it to see what the bird had been eating. What he found was not the remains of a chicken, a rabbit, a pheasant, not even a bob-white—but field mice! Could it be that the "experts" were in error about the animals killed by hawks for food? As he pondered the matter, he shot

down a few more hawks and examined the stomach contents. What he found convinced him that hawks should be protected—not slaughtered!

Today, as game protector for the State of Ohio, Laurel Van Camp not only protects the birds of prey but converts many a "hunter" to the idea of protection. When he finds a violator who has brought down a hawk, he persuades the man to examine the bird's stomach contents. It takes an extremely ignorant or narrow-minded person to argue against this kind of evidence!

The first bird ever banded by the Hawkman was a Cooper's hawk and this individual eventually became one of his most interesting returns. Banded on June 29, 1941, the bird was killed at Valparaiso, Indiana, on April 5, 1946. Five years is a long time, when you think of the many perils encountered by these birds!

Another interesting record concerns an American egret. The bird was banded near Toledo, Ohio, and recovered the following year in Baja California, where it was found dead in the Talamanca Valley. Think of it—not only had the bird migrated from a spot near our

Three of the 55 great-horned owls that Game Protector Laurel Van Camp had banded up to August, 1948.



Five young barn owls back into a corner of their attic balcony after being banded.





Immature Cooper's hawk photographed by Hugh M. Halliday.

northern boundary to a location beyond the southernmost limits of the United States, but in doing so had passed from one of our eastern states to a point close to the continental limits of the Western Hemisphere!

Of all the birds of prey, the screech owl is the Hawkman's favorite. He has banded more of this species than any other, and has collected a great mass of information concerning this bird. His work with screech owls began through an interest in wood-ducks. To help the ducks, he built and erected one hundred nesting boxes within a five-mile radius of Genoa. The boxes proved suitable to the wood ducks but were even more appreciated by screech owls. Last year, nine of the boxes were occupied by the ducks and twenty-one by the owls. A number of the boxes have served, also, as nesting quarters for flickers, starlings, sparrow hawks, fox squirrels, and raccoons.

A veritable mine of information concerning the screech owl, Van Camp's assemblage of facts seems to refute some of the oldest beliefs concerning the species. For instance, the dichromatism (two separate and distinct color phases) of

screech owls has long interested ornithologists. Red-brown and gray birds often occur in a single brood and it has been commonly accepted among ornithologists that two similarly-colored parents may have any possible combination of the two colors in the offspring. Van Camp may not yet have enough observations to prove that there is a fixed inheritance pattern but so far he has noted that a pair of the red phase invariably have all red young, while a pair of gray parents have all gray young. If a pair is composed of one parent of each color phase the red owlets will slightly outnumber the gray.

According to the Hawkman, very few screech owls ever move farther than ten miles from the place where they were hatched. The most distant recovery on one of his birds was approximately one hundred miles. There are two periods in the lives of these small owls when they move about restlessly for short distances. One occurs just after the young have left the care of the parents; the other takes place when the unmated young travel in search of mates. Few screech owls mate during their first year. They

nest early, often having a full clutch of eggs by the 18th of March. Only one brood is raised in a year and the number of young in a brood is usually three or four, occasionally five. He has found several nests each of which contained six eggs but, in every case, at least one of the eggs failed to hatch.

While he was far up in a giant sycamore banding a brood of young screech owls I asked him what he could tell me about their food. "I'll bring you the evidence," he shouted, and came scrabbling down the scaly trunk clutching a handful of the regurgitated pellets that contain the indigestible parts of their food. We sat on the ground and broke open the pellets, one at a time, searching carefully for skulls and other recognizable bits of animal remains. When we had finished there were skulls of frogs, toads, small rats, pieces of the exoskeletons of grasshoppers and large beetles, a few skulls of some sparrow-sized birds, a large number of the pincers of crayfish, but at least half of the remains was composed of the skulls of field mice.

While we rested in the shade of the tree I plied him with questions concerning his banding experiences. "Have you ever been attacked by any of the birds of prey while banding their young?" I asked, as we sorted over the bony remnants from many a feast of the owlets.

"Only once," he answered. "A red-shouldered hawk struck me in the back as I was reaching over the edge of her nest to grasp one of the young. Her talons cut through a leather jacket, a sweater, a shirt, and into my back."

"What did you do?"

He shrugged. "I could think of nothing to do, so I held on to the limb and waited to see what would happen next. I guess she discovered that I could not be knocked out of the tree so gave it up as a bad job. While I finished banding the young she sat high up on a dead snag about a hundred yards away and screamed as only an angry red-shouldered can scream."

Laurel produced a long string of bands and began jotting down the numbers of the four he would use at the next nest.

"Would you say that the red-shouldered hawk was the most dangerous bird to band?"

"I should say not," he replied. "I consider banding a nest of young great blue herons about the trickiest job I ever attempted. They pick at anything that glistens, you know; and as soon as your head reaches the level of the nest they strike at your eyes with those rapier-like bills. When my head is still a foot below the rim of the nest I reach over the edge, grasp the birds by the legs, and pull them off their feet. Then, they are unable to strike. To make matters worse the nests of the great blues are always located at heights of eighty feet or more,

★ NATURE IN

Excerpt from N. Y. Herald Tribune, March 16, 1949

Bird Watching

Ornithologist Says Pastime Sweeps U. S. as Retreat From World of Gadgets

By JOHN O'REILLY

Roger Tory Peterson, who can identify any bird in the United States by sight, paused on a passage through New York yesterday long enough to disclose that Americans are taking up bird watching in wholesale numbers as "an antidote for the disillusionment of the post war world."

Mr. Peterson, who is one of the country's greatest field ornithologists, said that bird watching had become a national pastime in England and is now sweeping this country. He described this recent growth as "a return to reality rather than an escape from it."

"Birds," he said, "are perhaps the most eloquent expression of reality."

He said that wherever he goes about the country he finds people who have been "sleepwalking in a world that is highly artificial" are now turning to birds . . .

He explained that an emotional response to birds fills a need. To those who feel at odds with their environment; who feel a little neurotic or who get tired of trying to figure out modern ex-

sometimes well over a hundred feet. That is quite a distance to fall."

"I have heard a lot of people say that the great-horned owl is very destructive to poultry and game. Is that true?"

The Hawkman smiled ruefully. "An owl kills for food," he replied. "If a farmer does not shut his chickens in at night they are a great temptation to any horned owl that happens to be in the vicinity. However, this owl is a definite asset to any farm where chickens are penned up at night because it will rid the place of rats. Have you ever noticed," Laurel continued musingly, "that the people who complain about the killing instincts of our birds of prey are often the very ones who risk their own lives and the lives of a carload of passengers by dodging back and forth across the highway *trying to run down* every

living thing that crosses in front of them? Everything from sparrows and mice to chickens and rabbits, opossums and raccoons?

"Within a square mile, likely, you would find more animals killed by cars than by the hungriest of great-horned owls. In fact, a wise horned owl could have more fresh meat than he could consume if he would carry off the rabbits and chickens killed by cars near his nesting place."

The Hawkman arose and tucked his pliers, notebook, and bands into his jacket pocket. He started off down the trail and motioned for me to follow. "No," he said, "I believe in live and let live. Why should I consider myself the self-appointed executioner of any species of bird that kills only for food, not for pleasure or profit?"

N THE NEWS ★

istence, he advocated the usual evolution of those who get great satisfaction from birds. The first step is to determine whether you get an emotional response from watching birds. The second is the desire to know the names of birds. The third is a growing curiosity about birds in relation to their environment. This, he said, could lead into many paths, even to a better understanding on the part of the individual of his own place in his environment.

"Man lives in a kind of gadget world," he said. "It confuses him. . . . Through the study of bird ecology man finds he has his own ecology and begins to recognize forces and influences that play upon him. Interest in wildlife may be the salvation of man in a world he fails to understand."

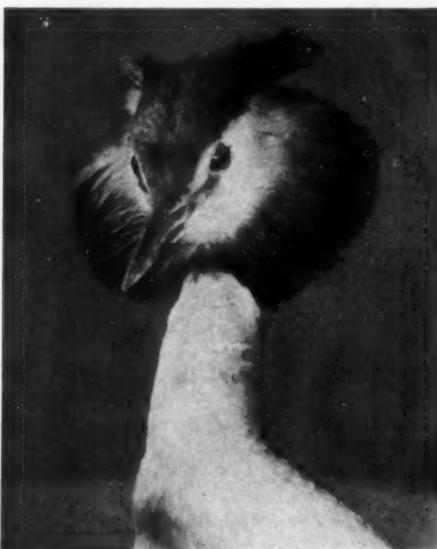
Grebe Makes News

This fellow got a full-page picture in Parade, the Sunday picture magazine which is distributed by many newspapers throughout the country. The following caption appeared with it:

"Nature, which seems to have known what it was doing in the case of Betty Grable, trees, flowers and most varieties of birds, sometimes goes all to pieces, as in the case of the grebe. A fouled-up fowl that combines the worst features of a loon, owl,

swan and one of your nightmares, it slinks morosely around remote swamps in Europe and America nursing a split personality. Grebes' true feelings are expressed during courtship, when they sit face to face and shake their heads. The only good

Continued on page 136



Great-crested Grebe by Graphic House

Our Beautiful
Western Birds



RUSSET-BACKED THRUSH

In somber fern-carpeted forests in the Northwest, in tangles of dogwood and bracken in California, or in willow thickets, the breezy flute-like phrases of the russet-backed thrush make cathedral music.

Each vibrant phrase ascends in a sequence reminding the Easterner of the lifting lay of the olive-backed thrush, and well it might, for the two birds are conspecific—merely races of the same species.

The hermit thrush, another wide-eyed chorister of the shadows, shows a rusty-red tail when it flies away, but the russet-back is cloaked from head to tail with a dull, even brown.



Painted by
Roger Tory
Peterson

BLACK-HEADED GROSBEAK

East is East and West is West. The Plains are the great divide that separates certain eastern woodland birds (like the rose-breasted grosbeak), from their western counterparts (like the black-headed grosbeak, shown here). Fundamentally, the rose-breasted and the black-headed are the same; they must have sprung from the same origin, as their passionate robin-like singing and their mutual liking for young tree growth along streams testifies. In appearance, however, they differ; one possesses a bloody stain on its white breast, the other the rusty hue of a robin. The females, however, betray a closer affinity.



BABY BIRDS



FOR thirty years or so I have been struggling with the practical problems of bird drawing. On numerous expeditions, working in tents, storerooms, freight cars or tourist courts, I have made studies of the heads and feet of freshly killed specimens. I have amassed a collection of detailed drawings of spread wings, especially of those species in which the pattern is noticeable or striking. Whenever possible, I have sketched birds direct from life—crippled hawks and owls brought in by gunners; ducks caught in traps for banding; and captive birds in zoological gardens. So as to understand the way a bird's feet behave I have drawn feet, and feet only, by the hour. This can be a fascinating business, especially when the bird is a living hawk or owl.

In making color-plates for bird books I have used stuffed specimens far too many times as models. Often I have used photographs, or little pencil sketches made direct from life in the field. Only infrequently have I been able to use a live model. Such a procedure virtually demands bringing the bird to the studio, for painting direct from life in the field involves lugging equipment around, erecting shelters from the sun and rain, keeping off mosquitoes, deer flies, black flies, sand flies, ticks, "and et cetera" as my friend Al Horr used to say.

Bringing adult wild birds to the

AS MODELS

By George Miksch Sutton

Left: Yellow-billed Cuckoo

From top to bottom:

Cerulean Warbler

Ruffed Grouse

Scarlet Tanager

Paintings by the author



studio can be very satisfactory. All owls, even such powerful species as the great horned and snowy, are surprisingly docile by day and will "pose" by the hour. In fact, I have made a direct-from-life portrait in oils of a great horned. But beware of letting a live wild mallard or black duck loose in the studio; and don't let your face get too close to a live loon or heron!

This brings me straight to the point, namely, that baby birds of all sorts make wonderful models. Some of them are excitable and restless and will no more "stay put" while awake than a healthy child would; but others will, when properly fed, stay in one position and allow

an artist to study them carefully as he draws.

Recently I painted a young blue jay, the pet of Harrison B. (Bud) Tordoff. I had painted young blue jays before and didn't exactly *need* the sketch for reference, but when I saw how tractable the bird became when well fed I could not help myself—I simply had to draw him. He was content to dose part of the time. When I roused him, so as to catch the mischievousness of his dark eye, he became much interested in my moving brush.

Nathan S. (Nate) Potter III caught the baby yellow-billed cuckoo long before it was able to care for itself. Nate's

Spotted Sandpiper

Paintings by R. M. Mengel

Robin



conversational language is a wondrous mixture of metaphor, simile and hyperbole, but he was not over-picturesque when he described the way his young cuckoo "bloomed," for young cuckoos do have a way of being disappointingly pinfeathery up to a certain moment, then presto! the blood-quills burst and cuckoo is no longer reptile, but bird!

My study of Nate's young cuckoo shows how it looked a day or so after "blooming." It was a perfect model, because every blessed thing it did—the way it turned its eyes downward, the way it held one position stiffly then shifted to another, the way it sidled along its perch—was so essentially cuckoo-like. A cuckoo is a comparatively "easy" bird to draw because its family characters are so pronounced. Nate complimented me

when he insisted that my drawing was really *his* cuckoo. "That's not just any old cuckoo," said he. "It's mine, see! The very one I raised. You couldn't fool me. It's *my* cuckoo!"

The baby cerulean warbler I had long wanted to sketch direct from life. Andrew J. Berger caught it for me at the Edwin S. George Wildlife Reserve, 22 miles northwest of Ann Arbor. Cerulean warblers are very common there, but they stay so high that no one sees much of them. The young warblers, which almost never come to the ground while they are growing up, are as much a part of the treetops as the leaves themselves.

The young scarlet tanager was caught by Kenneth W. Prescott, who had been

Green Heron



Paintings by Wm. A. Lunk

Catbird



studying that species assiduously for the past year or so. How curiously finchlike the fledgling tanager is, with its heavy bill and streaked under parts!

I have long recommended to young bird artists that they work with baby birds direct from life whenever possible. Two of these artists, Robert M. Mengel of Louisville, Kentucky and William A. Lunk of Fairmont, West Virginia, have had good success in drawing young birds, and I take pleasure in presenting their work to *Audubon Magazine* readers. Bob Mengel is tremendously interested in Kentucky birds. I predict that a truly notable "Birds of Kentucky" will be appearing from his pen and brush in the not too distant future. Bill Lunk is similarly interested in West Virginia birds. I have known these young men for a long time and have watched their progress with great interest.

Bob Mengel's study of the baby robin is full of appeal. The color is exceptionally good, a fact which cannot, unfortunately, be revealed through the black-and-white reproduction here. Mengel's study of the baby spotted sandpiper is vivid. He drew the restless mite direct from life despite its scampering and teetering at the same time. This is what Mengel has to say about his work:

"PAINTING the spotted sandpiper was not too easy since it was exceedingly active. I did not tackle the job until I had watched it carefully for over an hour without drawing it, and had supplemented my observations with thumb-nail sketches. Even then I found it helpful to complete the study by reference, for plumage detail, to a dead specimen.

"The young robin hopped across our front lawn at Whitmore Lake, Michigan, just as my wife and I were in the last throes of packing for several weeks of field work in Kentucky. The house was in a turmoil, but we dropped everything, caught the robin, and made the study. I worked in the kitchen (where the light was best) with my wife endeavoring to herd and cajole the bird into the proper place and position. Once the proportions and form of the restless bird were captured, the details of plumage presented little difficulty.

"No two living birds behave in quite the same way as models, and most are trying in one

way or another. However, notwithstanding the difficulties they present, an authentic quality is apparent in sketches from them which is very difficult to achieve otherwise."

Bill Lunk's study of the young green heron is authentic. The artist has not made the slightest attempt to improve upon nature. He has recorded the staring, almost ophidian, eye, the tousled down, and the flabby toes. I derive great satisfaction from studying a drawing as well done as this. The young catbird too is authentic. Lunk's careful delineation of the wing feathers reveals his knowledge of pterygraphy as well as his instinct for recording that which is intrinsically interesting and artistic. This is what he has to say of his work:

"IN painting birds direct from life one learns to seize opportunities as they come. When I saw the young green heron's big yellow eye staring icily at me through the glass front of its cage, I knew I would have to paint the bird at once. It had been caught after a strenuous chase by Larry Camburn and Andy Kirtland out near the Edwin S. George Reserve. While able to fly to some extent, it still was awkward and ungainly; and the comical white fuzz on its head and nape left no doubt of its immaturity. Though restless (who wouldn't be resentful of the indignity of all this chasing, caging and painting?) it cooperated splendidly, holding its head, bill and eye immobile for minutes at a stretch. No living bird is a perfect model, of course. I was obliged to paint most of the left wing while looking at the right because after the bird about-faced it would not resume its original position.

"A different sort of problem was the young catbird. My wife and I had handled it from the time it could barely stand erect, and it needed no cage. I had, in fact, painted it direct from life before. Given an occasional bribe in the form of a bit of dog food or a big grasshopper, it posed contentedly for hours on a chairback, finger, or any other convenient perch. It moved very little. My principal problem was the light, shadows and subtle tones of the plumage. In the interest of scientific accuracy it should be mentioned that the tail feathers may be abnormally stubby. Perhaps because of some dietary deficiency the shafts of the rectrices were weak and brittle. All such individual features, fortunate or otherwise, are bound to be revealed in these sketches; and it is partly these individualisms which make the drawing of birds direct from life so fascinating and instructive."

THE PRESIDENT *Reports* TO YOU

THE New York State members of the Society, given an opportunity to cooperate in expressing their views to members of the State Legislature, went to town in a big way and got results. The feather industry had sought and obtained introduction of bills providing for a three-year extension of time, beyond April 15, 1950, for the liquidation of wild bird plumage inventories. This the feather industry had done, through its counsel, in brazen disregard of written official commitment not to do so.

A primary purpose of the 1941 amendment to the New York State law was to end for all time the confusions and difficulties in enforcement connected with the retention of feather inventories claimed to have been acquired prior to 1911 (State law), or 1913 (Federal Tariff Act). In consideration of the waiving of such rights, the 1941 amendment granted members of the industry six years—until April 15, 1947—to dispose of wild bird plumage then in their possession and listed on inventories filed with the State Conservation Department.

When a three-year extension, to April 15, 1950 was granted by the legislature in 1946, the Society did not oppose it, bearing in mind the handicaps which the feather industry, like other industries, had to contend with during the war.

A commonly-heard remark is to the effect that, inasmuch as the birds, whose plumage is currently held for sale, are dead, what harm does it do to permit the sale? If that reasoning were followed to its logical conclusion, there would have been no point in any legislation in 1911 or later. Nearly forty years of experience

with plumage laws has made it clear that as long as the sale of any wild bird plumage is legal, ways and means have been found to circumvent the law.

There is only one way to put an end to the slaughter of wild birds for the commercial use of their plumage in the



Long ago, women rejected the fashion of wearing the feathers of slaughtered egrets.

United States: that is, to carry into effect the existing provisions of the New York State law, without granting any further extension of time for liquidation of unsold portions of the 1941 inventories.

The New York State law governs because over ninety per cent of the U. S. dealers in wild bird plumage have their places of business in New York City. The great bulk of their business in feathers involves those of domestic fowl, the sale of which will

remain legal after the traffic in wild bird plumage has been stopped.

An Albany friend recently wrote us, "The members of the legislature received a good many more letters on this subject than they have on the subject of the budget or any other matter that has been on the front pages lately." The conservation committees of the State Senate and Assembly reported out the bills with provision for a one-year instead of three-year extension of time, and the legislature has passed them in that form. This does not meet the issue, but is simply a compromise. If the bill is approved in this form, however, the legislature would probably be indisposed to give any favorable consideration to any new request for an extension of time a year from now. At this time it is not known whether the Governor will veto the bill, as your Society has urged him to do.

HOOVER COMMISSION

The Hoover Commission on Organization of the Executive Branch of the Government has recommended the creation of a new Department of Natural Resources to include the Fish and Wildlife Service, the National Park Service, a Forest and Range Service combining the Forest Service, the Bureau of Land Management and the Forest Insects and Disease Research Division; also the Geological Survey, the Bureau of Mines and the Oil and Gas Division. The Commission also recommends a new Water Development Service, which would include the Bureau of Reclamation, the river development functions of the Corps of Engineers, the power marketing functions of Interior's Bonneville and Southwestern Power Administrations and of the Division of Power, certain river development functions of the Federal Power Commission and the international boundary stream functions of the State Department.

Although your Board of Directors has not yet had opportunity to study these

recommendations or determine the Society's policy with regard thereto, it may be said that it has been the general feeling of national conservation agencies that the creation of a new Department of Natural Resources, with cabinet status, would be most desirable. Furthermore, it has been their feeling that there is vital need of finding effective means of eliminating the competition between the Bureau of Reclamation and the Corps of Engineers, which has resulted in their seeking authorizations to build dams on practically every tributary of every watershed in the country.

It is not to be expected that the recommendations of the Commission will be accepted without bitter fights, especially, we would venture to predict, with regard to the inclusion in the new department of the river development functions of the Corps of Engineers and the transfer of the Forest Service from the Department of Agriculture.

DUCK STAMP AMENDMENT BILL

Members of the 81st Congress had by February 15 introduced more than four thousand bills and resolutions, of which more than four hundred affect in one or more phases the conservation of soil, water, forests and wildlife. This is to be construed, among other things, as additional evidence of increased public comprehension of the vital impact that the conservation of natural resources has upon human welfare. Most of these bills will doubtless die in committee. Some are of little importance; some are meritorious; others are introduced because of local pressure or for home consumption.

The Duck Stamp Amendment bill has again been introduced, this time by Senator Johnson of Colorado, as S. 1076. A companion bill will undoubtedly be introduced in the House and referred to the Committee on Merchant Marine and Fisheries. Mr. Clark W. Thompson of Texas is Chairman of the Subcommittee and readers' letters of opinion in this matter should be addressed to him. The

bill has three features, two of which your Society favors; namely, (1) an increase in the price of the Duck Stamp, and (2) provision for use of a larger share of the proceeds for enforcement activities and equipment. We are strongly opposed, however, to the third feature, which, by insertion of the words "wildlife management and" before the words "inviolate migratory-bird sanctuaries," would permit the Fish and Wildlife Service of the Department of the Interior to open to hunting, in part or in whole, at its discretion, areas acquired with Duck Stamp funds after the passage of the amendment.

We believe that refuges should be refuges and that they cease to be such when opened in part or in whole to hunting. Public hunting grounds should continue to be provided by the several states and that the federal government should not go into the wildlife shooting business.

RESPONSE OF WILDLIFE TO PROTECTION

Based on figures to date, over one thousand persons will have participated in Audubon Wildlife Tours by station wagon and boat in Florida during this winter and early spring. Your Society's Miami office has been humming with activity and will doubtless need additional office space and help another season. Wildlife of all kinds has responded to the closing of the Everglades National Park and Wildlife Refuge areas in south Florida to the carrying of firearms. Not only are birds and alligators along the roadside rapidly becoming unafraid of man, but it would appear that the absence of shooting has been an important factor in the increase in the number of nesting roseate spoonbills in Florida Bay. There the spoonbills pair, build nests, lay eggs and hatch young in November-December, at the time of

Young roseate spoonbills photographed by Hugo H. Schroder



the waterfowl hunting season. Spoonbills nested this year on not less than seven Keys and the number of nests was at least four times greater than just a few years ago. The policies of a national park, or of a wildlife refuge maintained as an inviolate sanctuary, indeed produce splendid results.

NEW MATERIAL FOR AUDUBON JUNIOR CLUBS

In the coming school year members of Audubon Junior Clubs will receive much more material than heretofore. Each set of leaflets will consist of seven instead of six subjects and the seventh will concern a mammal instead of a bird; in the first instance, a leaflet with color plate of the black bear. In lieu of the outline drawings heretofore furnished there will be pages of practical suggestions about things to do and how everyone can help protect and conserve the soil, water, plants and wildlife of our country. Each Junior member will receive a membership certificate, as well as a button.

There will be an American edition of the newly-acquired magazine *Canadian Nature* and this will be made available to organizers of Audubon Junior Clubs, and the members thereof, at a special reduced subscription rate. Announcement forms with regard to this new Junior plan should be available by July.

MINERAL RIGHTS IN EVERGLADES

The effective establishment of the Everglades National Park, although it has already been dedicated, depends primarily on the acquisition of the private lands within the agreed-upon boundaries. To enable the federal government to acquire those lands the State of Florida contributed two million dollars. The Department of the Interior has been handicapped in using these funds for that purpose because of the absence in the basic National Park Service act of provision granting power to condemn. Passage of bills to provide that power, in so far as the Everglades

National Park is concerned, (S. 285 and HR. 1245 in the present Congress) has been delayed by the selfish efforts of a few private land owners who seek amendment granting long-term mineral right reservations. The National Park Service has recently concluded the purchase of the largest tract of private land in the area. In so doing, it granted mineral right reservations running from seven to nine years. Your Society and the conservation committee advisory to the Secretary of Interior had recommended that the Park Service not grant any mineral right reservations. The chance of oil being found in the Everglades area is negligible, but the precedent established through the granting of mineral right reservations in a National Park is unfortunate. Now, however, that a precedent has been established, we feel that, in fairness, the same mineral right reservations, but no more, should be granted other private land owners in the area. It is important that these bills be passed soon. They have the unanimous support of the members of the Florida delegation in Congress and of the State cabinet. The chairmen of the Public Lands committees to which these bills have been referred are Senator Joseph C. O'Mahoney of Wyoming and Representative Andrew L. Somers of New York.

SAVE THE SOUTH CALAVERAS GROVE

Perhaps the most magnificent virgin stand of Sugar Pines—ranging in age from 300 to 500 years old, 200 to 240 ft. tall and 6 to 8 ft. in diameter—is threatened with immediate destruction. These, and many fine sequoias are in the South Calaveras Grove in Tuolumne County, California. The Pickering Lumber Company, a midwestern corporation, is preparing to log this grove and has placed a price of \$1,700,000 on it.

The Calaveras Grove Association of Modesto, has been making a valiant effort to arouse the public to prevent destruction of these great trees and has

sought contributions of money in an attempt to obtain half the necessary sum, to match available State funds.

To its aid has come the California War Memorial Park Association of Los Angeles, abandoning, however, the effort to raise matching funds and seeking legislative appropriation of the entire sum, with provision of condemnation power.

Here is further illustration of the need of inventory of the country's re-

maining virgin forest and wilderness areas and federal and state adoption of over-all policy that it is in the public interest that the best of such areas be permanently set aside, free of the threat of commercial encroachments. Such policy will have to be implemented with appropriations adequate for acquisition and maintenance. The California legislature should act now to assure the permanence of the South Calaveras Grove.

Looking directly up sugar pine. Photograph by National Park Service.



ARE THE NEW INSECTICIDES DANGEROUS TO OTHER WILDLIFE?

(A Statement Given to the Press that is of Interest to Audubon Members)

NEW YORK.—"Reports of heavy mortality of birds, fish, frogs, crabs and other marine and fresh-water life, allegedly as a result of insecticide dusts and sprays, has led the National Audubon Society to investigate the situation," John H. Baker, president, said today. His complete statement follows:

"Far too little attention has been paid to repeated warnings by the U. S. Fish and Wildlife Service and the Department of Agriculture on the danger of employing certain new insecticides in heavy concentrations in outdoor areas. With the expanding use of such poisons, increasingly serious damage can be expected unless great care is taken in dusting and spraying. These new insecticides include DDT, DDD, TEPP and chlorinated camphene.

"These toxic agents in heavy applications not only kill birds and fish, but lead to heavy destruction of bees and other insects valued by farmers and fruit-growers. Land fertility may also be affected. It concerns human welfare as well as wildlife.

Phoebe by Allan D. Cruickshank



"Surveys and experiments conducted by the U. S. Fish and Wildlife Service have demonstrated in what concentrations DDT may safely be used. Other organics have not yet been fully tested. Some of them are more deadly than DDT to warm-blooded animals. Wildlife mortality has been cited by scores of observers after checking the results of local insecticide spraying and dusting. Such evidence confirms the hazards of drenching outdoor areas with the new insecticides.

50 Per Cent Mortality from Insecticide

"Among specific examples of destruction of wildlife that have been given was a reduction of 50 per cent or more in the bird population in six days in a test plot in Texas, dusted with 4.36 pounds of DDT to the acre. A reduction of 65 per cent took place in six days among common bird species in a Maryland woodland tract, following aerial treatment with a similar amount. Quail, fed on diets containing low percentages of various new insecticides, did not begin to succumb until the eighth day. Deaths continued to occur among them up to the 34th day of the experiment.

"Heavy kills of fish and crabs occurred after aerial applications where as little as $\frac{1}{2}$ pound of DDT to the acre of water was employed, the poison being fatal to aquatic life in much lower concentrations than to land animals.

"Where lighter woodland applications of DDT than 2 pounds per acre have been used, little or no animal mortality has apparently resulted. Even in such cases, however, the destruction of all types of insects by this toxic agent has occasionally been followed by aphid or mite outbreaks resulting from loss of natural control by other insects.

"A great deal more research is clearly needed to establish the value and limitations of organic insecticides, and their safe employment out of doors. There is no question but that certain crops have benefited by the proper use of these poisons, but every precaution should be taken in their application at this early stage of their development.

Slow Action Fatal to Birds

"The peril of the new insecticides to birds lies in the fact that these organic poisons act slowly. Some of them have residual, cumulative effects. Birds usually devour only living insects, but poisoned and poison-laden insects which have not yet succumbed can provide a fatal diet for adult birds and their young. A nest brought to the Audubon Society's offices contained four dead nestling robins, surrounded by dead carrion beetles which had in turn been poisoned.

"Adult birds may fly many miles from a sprayed area before they are seized by the convulsions which precede death from DDT. It should also be borne in mind that insectivorous birds avoid or abandon any territory in which insect life has been practically exterminated. This explains the disappearance of birds from many urban areas subjected to repeated heavy spraying. Practically all our land birds are insectivorous in the nesting season.

"The opinions of many qualified officials emphasize that rigorous measures should be taken by farmers, municipal authorities, golf-course officials and by private property owners to avoid damage from using excessive amounts of these poisons. The experience of the U.S. Fish and Wildlife Service in treating many types of land should serve as a dependable guide to safe, effective concentrations for various purposes. Most important of its findings is the conclusion that such poisons should be used only when and where they are needed, and in the minimum quantities necessary to control the specific insect target.

Concentrations for Use over Land and Water

"With regard to DDT, the U. S. Fish and Wildlife Service recommends the use of less than 1/5 pound per acre over water or marsh, in oil solution, not in dust, to avoid kills of fish, crabs and crayfish. Less than 2 pounds of DDT per acre should be used even in forest areas, to prevent death or injury to birds, frogs and mammals. On turf and lawns badly infested by Japanese beetles, effective larva control can only be carried out by concentrations as high as 20 or 25 pounds of DDT per acre. This can be expected to take a moderate to heavy toll of bird life.

"DDT should be applied in early spring for early insects and not again until late July or August, after the bird-nesting period, to control late-appearing insects. The extreme sensitivity of fish and crabs to this poison makes its direct application inadvisable on streams, lakes and coastal bays where injury would be inflicted on commercial or sport fishing, and on ducks, shorebirds and other species which feed on aquatic animals.

"The National Audubon Society would welcome specific reports of insecticide experience from entomologists and other qualified individuals or organizations. Such observers should carefully determine the concentrations and amounts employed, as well as the specific mortality or reduction in bird or other animal population that may result in a given area."

Photograph by Paul F. Runge



AROUND
THE
AUDUBON
CIRCUIT

with
KEN
MORRISON

A MANATEE, popularly called "sea cow," is swimming around in the Miami River today instead of languishing in captivity because of the vigilance of the TROPICAL AUDUBON SOCIETY. When members of the Society discovered that a manatee, one of North America's rarest mammals and one of three known to exist in the Miami area, was to be captured for exhibition purposes, they went into action. So many protests piled up before the city commissioners that they rescinded the permit to take the manatee. Thus another good solid blow for conservation had been struck by the TROPICAL AUDUBON SOCIETY. In commenting on the incident at the Society's last meeting, Charles M. Brookfield, who is Audubon representative in tropical Florida, stated that Audubon members must be constantly on guard to thwart ill-advised plans that may be of great detriment to wildlife.

Tropical Audubon's president, Oliver Griswold, believes that an Audubon Society ought to undertake enough constructive projects so that its treasury will be virtually depleted at the end of every year. Toward this goal, his Society is considering a bus tour for outstanding members of the Audubon Junior Clubs in Miami.

A report from Roberta Foote, secretary of the TOPEKA AUDUBON SOCIETY, says that their newly-elected president, L. P. Dittmore, is taking the lead in encouraging the 850 members of the 21 Audubon Junior Clubs organized in the Topeka schools. The senior society puts on free movies for the juniors, has purchased bird-song records for them, and sponsors an annual May picnic and bird hike. "From these ranks," says Miss Foote, "we hope to find the birders of the future."

Spring, when nature puts on its greatest show of the year, is perhaps the best time to organize a local Audubon Society. An article describing all the steps necessary to get such an organization started has been prepared for the May-June issue. If you would like an advance copy so as to get things rolling right away, send your request to this column.

NEW AUDUBON BRANCHES: MADISON (Wisc.) BIRD CLUB—Thomas J. Stavrum, president; STEVENS COUNTY (Minn.) AUDUBON SOCIETY—Mrs. Floyd Strand, chairman.

A number of Audubon Societies and other organizations have announced that they will offer scholarships of from \$75 to \$125 to make it possible for qualified teachers and other youth leaders to attend one of the four Audubon Nature Camps this summer. Some societies require that the scholarship recipients be members, others leave the designation to school or youth club officials. Many more such scholarships are needed. If you are interested in proposing this project to some organization, write to Audubon House for the brochure which describes the Audubon Nature Camps in detail.

Have you ever heard anyone say that the trouble with Audubon Societies (and a lot of other groups) is that they are reaching only those people who are already "converted"? Aggressive societies are constantly drawing new people into their ranks, but the criticism might well be pondered seriously by all of us. What can we do to develop *public* interest in and appreciation of nature? The newspaper is our most accessible medium to reach the general public. Are we using it? Most papers run regular columns on gardening, bridge, music, etc., but the growing army of people who enjoy nature observation apparently is expected to glean what little satisfaction it can from the rod-and-gun column. Many papers have eagerly accepted nature columns when they have been offered to them. Our attention has recently been called to two such columns: "The Audubon Nook" by Mrs. Henry S. Blake, which has been running every Sunday for four years in the Topeka *Daily Capital*; and "With the Birds" by Ted Thomson, president of the MANKATO (Minn.) AUDUBON SOCIETY. It appears weekly in the Mankato *Free Press*.

If you enjoy writing, why not compose a few sample nature columns and submit them to your local editor? Make the columns timely. Deal mostly with what anyone can see at that particular season if they will just look around. It is a good place, too, to give publicity to Audubon Society activities. Anyone writing such a column will find many helpful ideas in the Audubon Nature Bulletins which can be subscribed to for \$1.25 a year through the National Audubon Society.

(Many thanks to those who have sent material for this column. Keep it coming! Address: Ken Morrison, National Audubon Society, Public Library Museum, Minneapolis 3, Minn.)

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(Six bimonthly issues a year)

Audubon Guide To Bird Attracting

A department in which our readers can share with each other what they have learned about how to attract birds.

Mrs. Paul A. Becker, founder of the H. J. Jager Audubon Society of Owatonna, Minnesota, sends the following notes on bird houses based on her nine years' experience in attracting birds at the Hilltop Bird Sanctuary on Leech Lake in northern Minnesota. A visit to this remarkable sanctuary, which harbors more than 200 pairs of nesting birds on three and one-half acres, is a highlight of the Audubon Wildlife Tours which are conducted in the Itasca State Park region during July and August each year.

Bluebirds, wrens and tree swallows will usually select, if given a choice:

1. a house that gives the impression of depth.
2. a house with a base no smaller than $3\frac{1}{4}$ in. x $3\frac{1}{4}$ in., or no larger than 4 in. x 4 in. Bluebirds have families of four, sometimes five. Tree swallows usually have an average of six if successful with the first laying. Wrens average about the same as tree swallows. The $3\frac{1}{4}$ x $3\frac{1}{4}$ is Dr. T. E. Musselman's base used for bluebirds. The base should have 3 to 5 holes bored in it for drainage.
3. a house of rustic appearance.
4. the entrance opening about $1\frac{1}{2}$ in. from the top of the house. The front of the house is 9 in. long, back $9\frac{1}{2}$.
5. a house fastened to a post out in the open. Partial shade may or may not be available at some time during the day. An iron post is most ideal as it helps to keep out the climbing rodents, mice, chipmunks and squirrels. If a wooden post is used it can be protected by a piece of tin as suggested by the U. S. Department of the Interior, Fish and Wildlife Service, Conservation Bulletin 14. If observation notes are to be taken the house should be placed just high enough so the observer may

Houses bring Birds to your Garden

look in easily—otherwise there will be the inconvenience of carrying a small ladder.

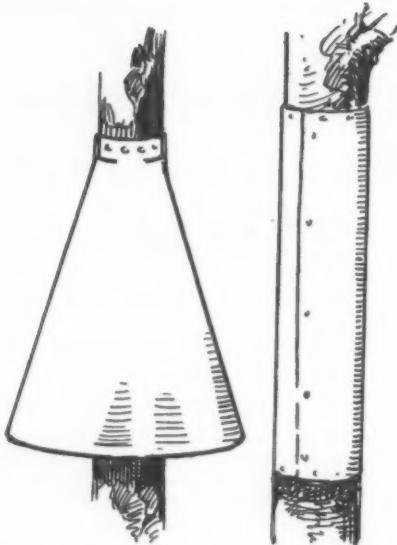
Points where the builder can give further help:

1. Use $\frac{3}{4}$ in. lumber. If you face the house with slabbing, the front and back may be of $\frac{3}{4}$ and the sides of thinner material coming from boxes. This insulation will help keep out the heat and prevent suffocation of young. If the rustic appearance cannot be supplied with slabbing, paint the houses made with $\frac{3}{4}$ in. lumber, a dull gray, dark brown, or dark green. Dr. T. E. Musselman of Quincy, Ill., the bluebird enthusiast, recommends sprinkling dirt and sand over the wet paint.
2. Make good use of perches—(1) rustic twigs beneath the opening and (2) face the front of the house with a long piece of slabbing. Cedar is the easiest to manipulate. Perches help to attract English sparrows as they are a clumsy bird and need the aid of a perch, but sparrows do not like a deep, narrow house such as the following design which is copied from page 117 of "The Audubon Guide to Attracting Birds." It has also appeared in *Popular Mechanics* and is the house advo-

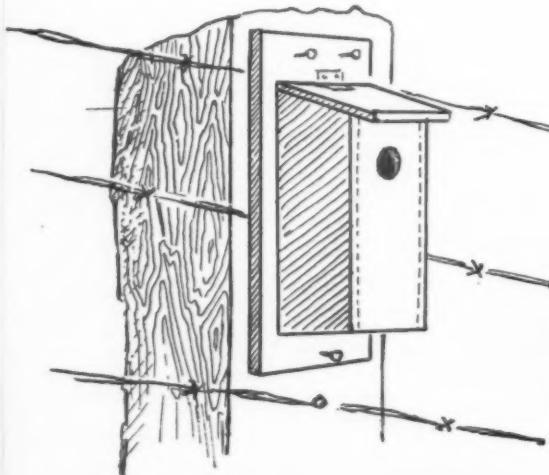
A Minnesota version of Dr. Musselman's house using cedar slabbing with a very knotty, peeled piece serving as the front. This is the house on which we tried making an additional perch by extending a piece of rustic cedar across front of lid. Tree swallows used this house, located near a young hawthorn.

Photograph by Mrs. Paul A. Becker





Sheet-metal tree guards



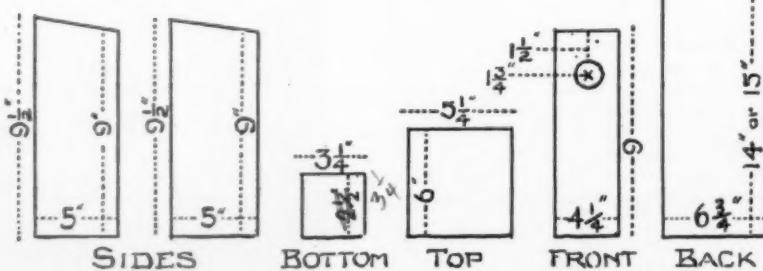
cated by Dr. T. E. Musselman previously mentioned in these notes.

3. As soon as young have left, remove nest to a container and burn. Scrub out the nest with good suds and a long-handled brush. Rinse thoroughly. All will drain through holes in bottom. Allow to dry thoroughly and then dust with a reliable insect powder.

Martin house requirements (our original attempt was based on an article found in a 1929 *Better Homes and Gardens* magazine).

1. Houses of such construction as to combat suffocation of young.
 - a. U. S. Department of the Interior, Fish and Wildlife Service Conservation Bulletin 14, page 9, recommends a house 6 x 6 x 6. The *Better Homes and Gardens* article argued for a house 8 x 8 x 8 because the martin was an 8 in. bird.
 - b. Use only $\frac{3}{4}$ to 1 in. lumber.
 - c. Insulating material can be used in the roof.
 - d. Never have houses next to the roof. Leave room here for an attic or air space to help carry off the heat.
 - e. Bore 2 or 3 holes on the outside wall of apartments not having a $2\frac{1}{2}$ in. opening.
 - f. Bore 2 or 3 ventilation holes near top boards between apartment walls inside.
 - g. If the size of the house is 3 x 3 apartments or larger, so that there is an empty space in center of house, this can be utilized with help of a chimney on top to help draw off the heat.
2. A continuous 4 in. catwalk for each floor.
 - a. This keeps young from falling out of nest or leaving too soon.

House designed by Dr. T. E. Musselman in "The Audubon Guide to Attracting Birds," page 117. Our version of this house is to increase the base up to 4x4, and to enlarge the other pieces accordingly.



- b. It provides such endless pleasure for these birds that if you observe them for a while you will see how much they feel this feature is vital to their happiness.
- 3. Arrangement of houses.
 - a. Do not put too many in a row. It fosters the tendency for a pair to claim two houses. Two pairs cannot seem to get along side by side.
- 4. Location.
 - a. Must be out in the open away from trees. Ours are all located where there is a sweep over a wide open meadow. Our pole, from the forest, or commercial 4 x 4's or 6 x 6's, vary in height from a scant 12 ft. to 14 ft. The height has not seemed important as long as the houses were out in the open. If one has trees to combat, then the higher pole is necessary to get the house above the foliage.
- 5. How to raise house.
 - a. Sink 4 ft. of an 8 ft. long 2 x 6 in a mixture of cement and rocks. Swing the house on the bottom bolt up between these uprights, bolting the pole into place.

I noticed in *Audubon Magazine* a request for hints that might help in attracting martins. I submit a suggestion that works.

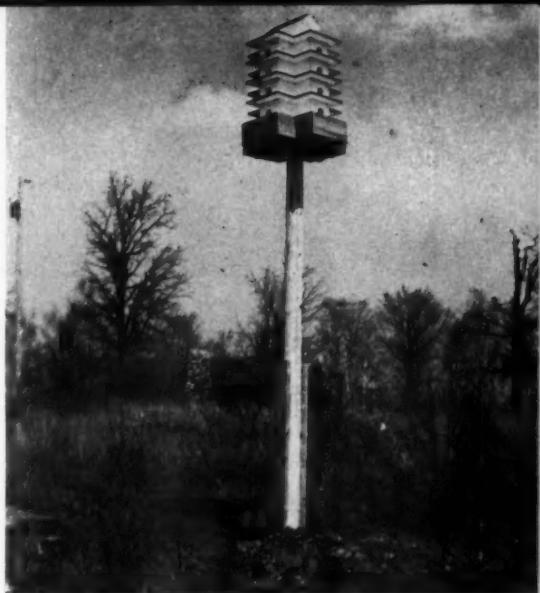
First, there must naturally be martins in your vicinity. You are lucky to get martins the first season after constructing their colony home. Your best chance, however, is to erect the martin house about thirty feet above ground, and paint it blind green. The martin senses a certain degree of protection in this color and apparently realizes that his home blends with the green of the earth below, thus making both him and his home less conspicuous to his enemies above. The pole, too, should be painted green.

Richard T. Penn
Danville, Virginia

One spring I brought back from Florida quite a lot of Spanish moss and draped it around the trees in our yard. It was not there very long. I never saw so many little "wings", in my life, who came there to gather it. So I always ask some of my Florida-bound relatives to send me Spanish moss every year. Orioles, cedar waxwings, robins, goldfinches, catbirds, yellow warblers and warbling vireos are some of the builders who use the moss.

I have, in addition to a bird bath on the lawn, another in the vegetable garden which brings the birds where I want them. This saves a lot of insecticide spraying.

Marcia M. Hudnutt
Big Rapids, Mich.



Photograph by Mrs. Paul A. Becker

An arrangement such as this seems to be especially popular with the martins. Each pair has distinct privacy. There are 17 apartments. We designed it and then built it by simply following these qualifications: make the house 8X8X8 and put on a continuous catwalk. We had no plans or blueprints. We merely laid out the base, drew the lines thereon, and figured it out board by board. We always had to look ahead to the next move to be sure that what we considered the next step would not be spoiled if we nailed that present board in place.

Built at Palatka, Florida, Ravine Gardens, as a solution to real estate shortages among martins, this unusual bird house of pecky Florida cypress, photographed by J. Carver Harris, lures a score of the "hotel birds" each year. Florida cypress knees serve both as convenient supports and perches. The house graces the gable of Ravine Gardens Cypress Pavilion.





Photograph by Charles Mohr

FACTS, FUN, AND FIELD TRIPS

Here are some suggestions for exploring the out-of-doors

by

Dorothy Dingley and Ruth Margarett

Photo & Film Department,
National Audubon Society

Knowledge gained from first-hand experience carries a far greater impact and is remembered much longer than knowledge gained from reading. That is why the field trip is so effective. A field trip, however, achieves its greatest value when the group has a purpose. A good leader will guide her group members in evolving their own purpose and needs, and will then direct them to the kind of experience that will help fill those needs.

A field trip is, essentially, a visit to a place where one can learn from first-hand experience. This type of activity is meaningful and dynamic, whether the expedition be to a museum, state capitol, bakery, newspaper, fire station or park. Merely being able to say, "I was there!" or "I saw the *real* thing!" carries with it the enthusiasm and desire to record as much of it as possible in our mind.

If a group of youngsters takes a guided tour along a nature trail—that is a field trip. On it, they learn of other living things that share the

earth and help provide not only necessities, but also much of the beauty of the world.

On any field trip, the interests of individuals vary. Consequently, the group leader needs to provide a great variety of potential experiences so that there will be more likelihood of each individual finding something that will be of special interest to him.

Among the members of an adult nature study group there will be teachers and camp counselors, club leaders and program chairmen who are looking for ways to interest others who have not yet been introduced to the enjoyment of nature or the importance of conservation. It is for these adult leaders that we are trying to make our suggestions as practical as possible.

Mrs. Minna Blatt, a visiting natural science teacher in the schools of New York City who works in cooperation with the National Audubon Society, has had many experiences with field trips from the standpoint of the group as well as the leader. She found teachers asking for practical suggestions on the "hows" and "whys" of field trips as well as good sources for field trip material in the vicinity of metropolitan New York. Reproduced here is a simple outline patterned after a form which Mrs. Blatt has found useful in helping the group leader who is planning a nature field trip.

Assembling informally relaxes group for more receptive learning.



WHY ARE WE TAKING A FIELD TRIP?

1. To gain first-hand experience.
2. To supplement other learning media.
3. To take advantage of a seasonal or temporary event.

WHERE SHALL WE GO?

Neighborhood - Park - Museum - Zoo - Reservoir - Farm - Forest Preserve - Wildlife Sanctuary - Field or meadow - Lake, stream, swamp, pond - Beach or shore - Woods.

HOW DO WE PLAN THE TRIP?

1. How can leader and group share in arranging the trip?
2. Will it be a full-day excursion or just a short trip?
3. How shall lunch and transportation be provided for?
4. Shall parents and friends be invited?

WHAT SHALL WE DO THERE?

1. Look for opportunities to point out inter-relationships.
2. Encourage group to share individual discoveries.
3. Help group to follow up new interests.

SOURCES FOR FIELD TRIP SUGGESTIONS

National Audubon Society, 1000 Fifth Avenue, New York 28, N. Y.

a) Audubon Teachers Guide b) Audubon Junior Club Program
c) Audubon Nature Bulletins (Street Trees, Nature Crafts, Seed Pods, Common Trees and Their Twigs) d) Audubon Catalog of Films & Slides e) Audubon Nature Center, Greenwich, Conn. f) Audubon Nature Camps for Adult Leaders.

American Museum of Natural History, New York City. Field Trips - Miss Farida Wiley

Local Boards of Education

Local Public Libraries

Local Boy and Girl Scout Councils

Nature Magazine, American Nature Association, 1214 - 16th Street, Washington, D. C.

Canadian Nature Magazine, 177 Jarvis Street, Toronto 2, Canada.

"Adventuring in Nature" by Betty Price,
National Recreation Association, 315 Fourth Ave., N.Y.C.

"Nature Recreation" by Wm. G. Vinal, McGraw-Hill Book Co., 330 West 42nd St., New York City.

Regardless of whether groups live in the city or country, they should learn to use the resources of their own community—whether for an all-day trip to a farm or museum, or a half-hour walk through the park. Mrs. Blatt uses a simple form where group members can report what they have seen on a nature walk, and which serves to guide

them during their trip by giving them an understanding of different kinds of habitats as well as the interrelationship of all kinds of life. It also emphasizes the variety of possible experiences, and serves as a springboard for follow-up discussions, special projects, hobbies, exhibits and demonstrations. A simple form follows:



A. Names of Trees and Where Found:

in the NEIGHBORHOOD _____
in the STREET _____
in the PARK _____
on a HILL _____
by a LAWN _____
near a POND _____

B. The Shapes of Trees I Saw:

C. Other Plants and Flowers I Saw:

D. Interesting Birds and Animals I Saw:

<u>Where Seen:</u>	<u>What Doing:</u>
On the Ground	Flying
In the Water	Feeding
In the Trees	_____

E. The Weather:

1. Clouds _____

2. Temperature _____

3. Wind _____

F. What I Liked Best:

G. What I Will Do:

H. Something To Remember:

Date _____

My Name _____

My School or Club _____ City _____

Report of My Trip To _____

Your locale, your group, and your purpose will be different. Consequently, you and your group will want to prepare *your own* outline of objectives and list of community resources. Definite techniques, which go far to insure the success of a trip, are offered in a leaflet, *How To Lead A Field Trip*, written by Charles E. Mohr, Director

of the Audubon Nature Center, Greenwich, Connecticut. Write to the Photo & Film Department, National Audubon Society, for a copy. For further help, consult local service and youth agencies. Call upon the varied experience of group members for suggestions. Make your field trips real adventures!

TWO NEW DOCUMENTARY FILMS

STRUGGLE FOR SURVIVAL • WILDERNESS CANOE COUNTRY

A documentary film reproduces a real situation based on facts obtained from careful study. From this definition, one can see the close relationship between the field trip and the documentary film. In the field trip, we go out to observe the actual situation. In the documentary film, the actual situation is brought to us to be experienced. This comparison suggests that the technique of using various types of media to complement each other is especially valuable in providing a well-rounded learning experience.

Most documentary films adhere as closely as possible to actual situations. However, individual techniques and treatments may differ. Such is the case with "Struggle For Survival" and "Wilderness Canoe Country," two new documentary films in the nature and conservation field that have been released this year.

"Struggle For Survival" is a 15-minute black-and-white documentary sound film photographed by Arne Sucksdorff of Sweden and released in this country by Twentieth Century-Fox in February, 1949.

If it were ever possible to portray the drama of the struggle for survival against a greater force, it has been done here by beautiful and realistic photography. The film shows the life of the

The murre protects her eggs
in the "Struggle For Survival."



Photographs on opposite page—from top to bottom—by: U. S. Forest Service, Rutherford Platt, Gene Heil, Allan D. Cruickshank, Gary M. Doets, Allan D. Cruickshank, Helen Cruickshank, Dorothy M. Compton.

"Wilderness Canoe Country." Photograph by U. S. Forest Service.



murre and other water birds nesting high on the rocky ledges of an island off the coast of Sweden. The peaceful nesting colony is continually threatened by the gray gull that seeks its food by stealing eggs and snatching fledglings that have fallen from the cliff. There is no narration. The photography tells the complete story. The only accompaniment is a beautiful musical score that underlines the drama of the struggle for survival.

"Wilderness Canoe Country" is a 30-minute 16mm. sound film in color produced by the President's Committee for the Quetico-Superior Area. It portrays the search of a father and son for the old wilderness that the father knew as a young man in the border country. In a rapidly-changing region, due to its accessibility by airplane, the search at times seems hopeless. Finally, after a long cruise of exploration, they find part of the wilderness still unchanged.

The film gives an extensive survey of the region along the Minnesota-Ontario border, highlighting its beauty and emphasizing the urgency of the present campaign to preserve its wilderness character. Groups of individuals interested in purchasing or renting this film should write to the President's Quetico-Superior Committee, 919 North Michigan Avenue, Chicago, 11, Illinois.

THE FIRST BIRD OF Spring

What is our first bird of spring? It cannot be the robin for he has stayed right with us and suffered the below-zero winter which we have had.

Spring is here when members of my Junior Audubon Club enthusiastically bombard me with the news that they have seen the first red-winged blackbird.

Off to the swamp I go on February 26. Here twenty of the red-wings play a symphony for me with their *o-ka-lee o-ka-lee* blended here and there with a chime-like note. I stand fascinated asking myself if I have ever heard anything so beautiful before.

ELLEN C. MUNSON

Ellensburg, Wash.

Here in northwestern Colorado we are never certain when spring actually overtakes us, for the weather may be sweltering in February and snowy in June. Many of the birds seem to share our misgivings, some, like the robins, to the extent that they remain here the year around to avoid overlooking the springtime.

If one bird were to rate the harbinger honor, I believe it would be the female red-winged blackbird. The males are with us in varied numbers throughout the winter, chattering over old times in treetops and apparently oblivious of their bach-

elordom. Then, out of a clear, warm March sky, without warning, arrive females from the South in flocks of hundreds, congregating in our cottonwoods and along our plains creek bottoms. Last spring the females arrived on March 28; and while they complacently enjoyed the scenery, the excited males clustered in an adjoining tree, looked, squawked, and sent an occasional envoy over to see if, indeed, bachelorhood were at a seasonal end.

Fort Collins, Colorado

R. G. BEIDLEMAN

In the Sierra foothill cattle range country of Kern County, California, people and birds are close friends and on a cold, frosty morning in March you may be greeted by some cowboy on horseback in words like these, "It sure is cold, but spring is coming. I heard a mourning dove coo this morning."

However, it is several weeks later when the oaks and buckeyes have new leaves, the hills are green with grass and the yellow blooms of wild gooseberries are spilling fragrance in the sunshine that all our folks (children and adults) are watching and listening for the return of the first Bullock's oriole. The male Bullock's color is gorgeous; his song is glorious; and for us he sings to eye and ear—"Cold winter is gone. Spring is here."

EDNA ELDEN WILLIAMS

Granite Station, Calif.

Flock of red-winged blackbirds photographed by R. G. Beidleman.



In our January-February issue we asked our readers to tell us what they consider the first bird of spring. Here are the replies.



Red-shafted flicker photographed by H. D. Wheeler.

The plaintive note *pee-ee* of Say's phoebe is frequently the first we hear of returning birds, but the real heralding of spring with us is the many syllabled, rolling note of the red-shafted flicker. The flicker remains with us throughout the winter and we hear his single note, but not until spring is on the way do we hear this thrilling call.

DR. RUSSELL T. CONGDON

Wenatchee, Washington

In Nebraska, the robin often stays all winter, the chickadee sometimes sings *phee-bee* in December. But when the male cardinal, who has claimed the feeder in lonely splendor all winter, allows his lady to feed beside him and offers her a seed, beak to beak, then spring is here!

LORENE HEINEMAN

Plattsmouth, Nebraska

Some mild evening in late February or early March, we hear above us the wild, uncanny cry of

the sandhill cranes. The birds may be invisible in the failing light, but like a fanfare of trumpets their resonant voices bring us the welcome news of spring's arrival.

In the following days great flocks numbering thousands drift up and down above the valley of the Platte River. At night they gather in vast hosts on meadows and table grasslands. Here Lee and Florence Jaques watched them, amazed at their numbers, and later, in "Canadian Spring," Mrs. Jaques gave an unforgettable description of cranes carried aloft on an updraught of warm air.

The cranes came on February 25 this year, an unusually early date. Do they foretell an early spring? We hope so. Western Nebraska has had a long hard winter.

MRS. CARL N. COLLISTER

North Platte, Nebr.

The first bird of spring? I think there is little doubt that our robin brings us the happy tidings that the long winter is over.

Here in Maine the chickadees remain in great flocks all winter. It is now March 1, and they have been giving their phoebe call for several weeks though we are still deep in winter. The crows also

Sandhill crane photographed by Allan D. Cruickshank.



remain to cast their black shadows on the snow and carry off the suet cages that are not nailed down securely. A flicker spent the winter here.

But now in a week or two, we shall see or someone will telephone that the robins are back. Then the wild geese will go honking north in "V" formation and very soon purple finches and white-throated sparrows will arrive with lovely songs. Yes, the robin is in fact, as well as in poetry, spring's earliest announcer.

October Farm
Waldoboro, Maine

Mrs. R.S. COONEY

Living on the Maine-Canadian border I have a double chance to look for the first birds of spring.

Since February 11, 1949, I have located 10 different birds. Some of them have been here all winter since it has been a mild one.

One robin has been seen all winter in Edmundston, New Brunswick, Canada, which is just across the river St. John from my home in Madawaska, Maine.

Other birds that I have seen are: pine grosbeak, hairy woodpecker, tree sparrow, chickadee (they are around all winter, also the snow bunting), white-throated sparrow (this lonely fellow was singing a mournful tune in a very quiet woods). Of course, the crows are back again, too. From four to six feet of snow lies upon the ground and will be here until the end of April or middle of May.

LEILAMAY WHITE

Madawaska, Maine

The first birds of spring around Toronto are the horned larks (Feb. 22), but running a close second are the crows (Feb. 29). Sometimes we see the crows first. To see the larks, special trips are made, as they are not as conspicuous. The third spring bird on our list is the song sparrow.

BARBARA RUDOLPH

Downsview, Ontario

One of the places where the advent of spring is most noticeable is along the creeks and little rivers that begin to swell and rush as March snows melt. Ice gives way to fast running water; receding snow along the banks exposes unbelievably green grass; skunk cabbages push their queer fresh heads through the rich wet soil and dark mosses.

To me, the bird which punctually completes this vernal picture each year is the phoebe. I therefore nominate him as the "First Bird of Spring."

EUGENE BROWN

Upper Nyack, N. Y.

Here in Findlay, Ohio, the first bird of spring is the song sparrow. Some of our first birds are the

robin, the red-winged blackbird, the killdeer, the grackle, the meadowlark, and the bluebird, but the song sparrow beats them all. Of course, he remains here all winter; nevertheless, he is the first bird of spring.

On a day no different from its predecessors—it may be snowing, or sleeting, or a raw wind from the north may be blowing—a song sparrow that has remained with us all winter hops upon the feeding shelf in the kitchen window and begins to sing, or rather attempts to sing. It can produce only a part of its song and the part that does succeed in coming forth is rusty, to say the least. But within forty-five minutes the bird has his bronchi and syrinx properly tuned and pours forth his full song. Then, I know that spring is on its way.

RICHARD STUART PHILLIPS

Findlay, Ohio

Here at my 15-acre home in the hills along the Jersey coast, I name the junco my "harbinger" of spring; not by his early arrival, but by his sudden departure, which occurs not so much by the calendar as by the actual approach of spring. This quiet, unassuming little fellow partakes daily of my food throughout the winter months. Then one day, quite suddenly, I realize I have not seen my "boarer" of late, and upon examination find his dinner plate quite full. Yes, he has departed for his northern breeding ground.

The bluebird is actually our first spring arrival, appearing about mid-February each year. However, I do not particularly associate him with spring for too often he heralds the final, though sometimes, worst storm or blizzard of the winter! As I write this letter (February 28) I am snowbound—just two weeks after the arrival of the bluebird!

CHARLOTTE OLSEN

Atlantic Highlands, N. J.

During the last two weeks of February I saw hundreds of robins, grackles and lesser bluebirds grubbing and worming our grain fields daily; even at dawn they were busily digging away and some days yet at dusk. The sight was astounding! Killdeer, red-wings, nighthawks, woodcock and phoebe were winging with the large flocks of robins and grackles at dawn. All day long, too, the deafening chorus of spring peepers and cricket frogs singing nearby.

But now comes the snowstorm of February 28 and juncos, cardinals and other winter birds are all that we have. Looking back over 12 years of records, I would say that spring has come to stay not when the first "this" or "that" bird arrives, but when the last junco is seen!

ELMER S. WORTLEY

Kintnersville, Pa.

Book Notes

By John K. Terres

THEY CALLED IT TROPICAL

By Charles M. Brookfield and Oliver Griswold, *The Data Press, Box 284, Coconut Grove, Miami 33, Florida, 1949. 5 1/4 x 8 1/4 in., paper covers, 77 pp. Illus. with photographs. \$1.00.*

The subtitle, "True Tales of the Romantic Everglades National Park, Cape Sable, and the Florida Keys," accurately describes the 12 interesting chapters in this attractive little publication. An astonishing amount of dramatic human history was involved in the Everglades area, from early Indians, Audubon's visit to Florida, and the lawless Captain Housman, to the tragic story of Guy Bradley, National Audubon Society warden, and the establishment of the Everglades National Park. Charles M. Brookfield, the senior author, is leader of the Audubon Wildlife Tours in the Florida Everglades and Cape Sable region. A welcome contribution to the little-known history of that strange exotic land of southern Florida.

THE CAVES OF TEXAS

Edited by Charles E. Mohr, *Bulletin Ten, The National Speleological Society, Washington, D. C., April, 1948. 7 1/2 x 10 1/2 in., paper-covers, 136 pp. Illus. with photographs, sketches, and a map. Indexed. \$1.00.*

Charles E. Mohr, editor of this guidebook to the caves of Texas, is educational director of the Audubon Nature Center at Greenwich, Connecticut. He is an authority on bats, and in the introduction to this book, tells us that Texas has more great bat caves than possibly any equivalent area in the world; they have a remarkable collection of live cave animals, and on their walls are the largest series of Indian paintings of any caves in this country. Twenty-nine articles, written by 17 authorities, discuss everything from duck hawks preying on cave bats to Indian picture-writing. Included is the fascinating story of the experiment conducted during the war in which bats were used to carry incendiary bombs.

THIS GREAT AND WIDE SEA

By R. E. Coker, *The University of North Carolina Press, Chapel Hill, N. C., 1947. 6 1/4 x 9 1/4 in., 325 pp. Illus. with photographs, maps and sketches. \$5.00.*

A comprehensive, but not too technical survey of the oceans and their plants and animals. The au-

thor, former special investigator of fisheries and the guano islands of Peru, directed the Division of Scientific Inquiry for the U. S. Bureau of Fisheries and has taught general zoology and aquatic biology.

There are brief sketches of early explorers of the seas and polar regions and of pioneers in oceanography from Edward Forbes to Alexander Agassiz; comparisons of the sea and land; explanations of oceanic canyons and "deeps"; how soundings are made; the chemical and physical composition of sea water; fishes and other kinds of life; sea water in motion, and a host of other physical, chemical and biological phenomena of the seas and their relationships. Highly valuable for its interesting history of oceanographic expeditions and leaders in this research, also for its excellent footnote references and bibliography. This book should be useful to teachers, students and the general reader interested in life in the sea.

ISLAND LIFE: A STUDY OF THE LAND VERTEBRATES OF THE ISLANDS OF EASTERN LAKE MICHIGAN

By Robert T. Hatt, et al., *Cranbrook Institute of Science Bulletin No. 27, Bloomfield Hills, Michigan, 1948. 6 1/4 x 9 1/4 in., 179 pp. Illus. with photographs, one map. Indexed. \$4.00.*

A study of the mammals, birds, reptiles and amphibians of 18 islands lying off the northwest shores of Lower Peninsula, Lake Michigan. From 1937 to 1944, field parties visited the islands to determine geologic and geographic distribution of land vertebrates, how various species reached the island, and the factors which prevented certain species from becoming established. One of the most interesting chapters is on modification of animal habits: of spring peepers breeding in the waters of Lake Michigan; of the duck hawk, great blue heron, and crow nesting on the ground; of crested flycatchers inhabiting evergreens as well as hardwoods, and of towhees living deep within a big deciduous forest. An appendix lists the vertebrate populations. Bibliography and superb photographs.

APE AND ESSENCE

By Aldous Huxley, *Harper & Brothers, New York, 1948. 5 3/4 x 8 1/4 in., 205 pp. \$2.50.*

A new satiric fantasy in the fashion of his earlier "Brave New World." The central narrative begins in the year 2108 with the arrival near Los Angeles of a "Rediscovery of America" expedition from New Zealand. Dr. Poole and his companions discover a land which, since the summer of 1948, has been a radioactive wasteland from atomic and bacteriological warfare, occupied by a slave community of men and women. This human hell was conceived out of our American pride in conquering nature, "fouling the rivers, destroying the forests, washing



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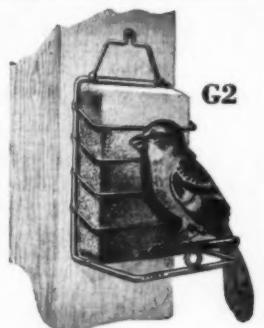
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the topsoil into the sea . . . squandering the minerals it had taken the whole of geological time to deposit. . . ." Written in the form of a movie scenario with flash-backs, soundtrack indications, and interpolation of a narrator.

THE LUNGFISH, THE DODO, AND THE UNICORN

By Willy Ley, *The Viking Press, New York, 1948. 5 1/4 x 8 1/4 in., 361 pp. Illus. with sketches. Indexed. \$3.75.*

A first edition appeared in 1941, but was drafted out of existence by the war. It reappears now with half of the chapters, either new, or rewritten. The author, who specialized in the history of zoology and paleontology at the Universities of Berlin and Koenigsburg, says that his book is not concerned with the main stream, but the by-paths of zoological history. There are absorbing accounts of the legendary unicorn, giant men of ancient Java, dragons, the basilisk, monsters of the ocean depths, the platypus, lungfish, the extinct dodo and many other creatures in this fascinating mixture of zoological legend and fact. The last chapter, "African Rhapsody," tells of comparatively recent zoological discoveries—the Congo peacock, okapi, and others.

COUNCIL FIRES

By Ellsworth Jaeger, *The Macmillan Company, New York, 1949. 5 1/4 x 8 1/4 in., 233 pp. Illus. with pen and ink sketches. Indexed. \$2.95.*

The author, Curator of Education at the Buffalo Museum of Science, has written another delightful out-of-doors book, following his "Tracks and Trailcraft," "Wildwood Wisdom," and others. The age-old magic of the camp fire is re-created with directions for fire-building, construction of various kinds of council rings, games, contests, songs, stories and authentic Indian dances which can be easily taught.

There are directions for making inexpensive council fire masks, headdresses and primitive musical instruments to give beauty and mysticism to the council fire. An admirable book for campers, hikers, or for anyone interested in living out-of-doors.

A B O U T N A T U R A L I S T S

JUNGLE MAN: The autobiography of Major P. J. Pretorius

E. P. Dutton & Co., Inc., New York, 1948. 6 x 9 in., 256 pp. Illus. with photographs. Indexed. \$3.75.

Although this book is not so much an autobiography as a series of hunting adventures, it is interesting for its picture of African big game animals and the passing of a frontier.

Major Pretorius was a professional commercial hunter, not a guide for wealthy sportsmen. His main interest was in ivory which he sought for a living. He once killed five elephants in thirty seconds and during his lifetime he shot 557 of them. He not only tells of hunting lions, rhinos and other big game, but there are tales of tsetse flies that wiped out whole villages, of ants and Moka bees, of Pygmies, cannibals, leopards, buffaloes, antelopes and other creatures.

ENGLISH NATURALISTS FROM NECKAM TO RAY: A STUDY OF THE MAKING OF THE MODERN WORLD

By Charles E. Raven, Cambridge University Press, London, 1947. 6 1/2 x 9 1/4 in., 379 pp. Indexed. \$6.50.

The author is Professor of Divinity at the University of Cambridge, England. His book is the outgrowth of a series of biographies of early Eng-

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with photographs by Allan D. Cruickshank

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lish naturalists which the author believes show the change in Western civilization from the medieval to the modern world. Apparently natural history in England began with Alexander Neckam in the latter part of the Twelfth Century, in a strange world of medieval cosmology. The book is sectionalized in treatment: the various English naturalists and their writings appear under sections titled, The Pioneers, The Popularizers, and The Explorers. A scholarly book and a reference on the older literature of English natural history up to the 17th Century.

ANT HILL ODYSSEY

By William M. Mann, *Little, Brown & Co., Boston*, 1948. 5½ x 8¼ in., 338 pp. Illus. with photographs and sketch maps. \$3.50.

An autobiography by a well-liked man of science that is a many-sided, but always fascinating story. Dr. Mann, Director of the National Zoo in Washington, D. C., and an outstanding entomologist, has brightened his accounts of boyhood and adult years with amusing anecdotes that show a warmth of feeling for his fellow man equal to his interest in the wild creatures that he has sought and studied in a lifetime. His recollections of William Morton Wheeler, Carl Akeley, David Starr Jordan, William Hornaday, and many others, give interesting sidelights on some of the most famous zoologists of America. The author also tells about collecting reptiles, amphibians and insects, particularly ants, a group in which he was a specialist for the U. S. Dept. of Agriculture. His chapter, "Armies of Ants," is one of his best, describing adventures collecting insects in the Amazon jungle on the Stanford University Expedition to Brazil in 1911. Other expeditions described were to Haiti, Mexico, the Near East, Fiji Islands, Australia, and other far away places. Unfortunately the value of this book as a reference is impaired by its failure to tell the dates of expeditions and other important events in the author's life, and its lack of an index.

ONE HUNDRED YEARS IN YOSEMITE

By Carl Parcher Russell, *University of California Press, Berkeley, Calif.*, 1947. 5¾ x 8¾ in., 226 pp. Illus. with photographs, one map. Indexed. \$3.75.

A revised edition which first appeared in 1932. The author, for many years Yosemite Park Naturalist, now chief Naturalist, U. S. National Park Service, has written a worthy addition to the regional history of America. There are accounts of the western journeys of the early fur-traders; Captain Joseph Walker's discovery of Yosemite Valley and the big redwoods, *Sequoia gigantea*; the legendary James D. Savage and the gold-mining pioneers in Yosemite; the first tourists and hotels, stagecoach days and early Indian routes; hotels and their keepers; and the great Bodie gold strike. One chapter gives an imposing list of natural history workers in Yosemite and their publications and the history of the National Park Service administration. There is a chronology of events, with sources of information and an extensive bibliography.

THE END OF THE TRAIL

By Willoughby P. Lowe, *James Townsend & Sons, Ltd., Exeter, England*, 1947. 5¾ x 8¾ in., 178 pp. Illus. with photographs. Indexed. \$3.05.

A fascinating story of a naturalist-collector's wandering in search of material for the British Museum, and a sequel to his book, "The Trail Is Always New." Almost half of this volume covers expeditions to Indo-China in company with Jean Delacour; of their adventures collecting fan-tailed flycatchers, the giant spine-tailed swift (one of the fastest-flying birds in the world), a rare gibbon, monkeys, a water civet, a quest for a flying lemur on a sacred mountain and other tales. There are stories of deer, wild pigs, hawk and buzzard eagles, and the discovery of a mysterious blind dormouse that inhabits decayed trees. From Tunisia and Indo-China the author's trail leads across the Sa-

hara to Tanganyika and the Ashanti forests of Africa's Gold Coast. Throughout this very readable natural history travelogue, the author expresses a devotion to the animal world and a regret at taking their lives, which he justifies in the name of science in his final chapter, "Reflections." An appendix lists more than 200 animals, new to science, resulting from the author's expeditions.

BIRDS

THE BIRDS OF NANTUCKET

By Ludlow Griscom and Edith V. Folger, Harvard University Press, Cambridge, Mass., 1948. 5¾ x 7¾ in., 156 pp. Illus. with photographs and a map. Indexed. \$3.25.

Ludlow Griscom, Research Curator of Zoology, Museum of Comparative Zoology, Harvard, and Chairman of the Board of the National Audubon Society, is one of our most eminent ornithological field workers. With Edith V. Folger, Instructor of Nature Study, Miami University, Oxford, Ohio, he has collaborated in this first of a series of faunal studies in Massachusetts areas where the abundance and variety of birds have aroused special interest.



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Nantucket Island, 15 miles long and 30 miles off the coast of Massachusetts, is not on a regular land-bird migration route, yet, of the 274 species listed by the authors, 132 are land birds. The report also includes the birdlife of the smaller islands of Tuckermuck and Muskeget nearby.

The introduction discusses causes for the changes in Nantucket birdlife, climatic factors involved, and a summary of ornithological problems on the island which should make any bird researcher long to go there to help solve them.

A systematic list points out what is *not* known about many species of Nantucket birds, gives the definite numbers seen (where figures are available) and the comparative status of each species.

One of the interesting and valuable functions of this report is its comparison of the differences in island vegetation and birdlife from those seen by Nantucket visitors, twenty, thirty, and even fifty years ago.

SAVE OUR HAWKS: WE NEED THEM

By Ellsworth D. Lumley, National Council of State Garden Clubs, Inc., 500 Fifth Avenue, New York, 1948. Pamphlet, 8 pp. 5¢.

The author, Bird Chairman of the National Council of State Garden Clubs, is noted for his many excellent pamphlets on wildlife conservation

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written for the Emergency Conservation Commission. In this one he has produced a fine appeal for hawks, citing their usefulness to the farmer in protecting his crops from rodents, discussing how the destruction of hawks upsets nature's balance and showing the need for scientific hawk management as a part of our conservation program. There is a reference list of four hawk publications. The publishers offer this pamphlet for sale to garden clubs and other conservation groups at the following prices: 25 for \$1.00; 100 for \$2.75; 500 for \$9.50. The National Council urges that copies of this pamphlet be purchased for widespread distribution among farmers, sportsmen and others.

WYOMING HAWKS

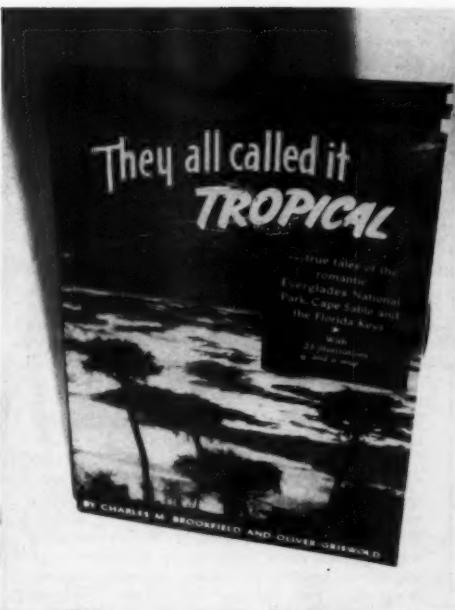
By Ralph B. Williams and Clyde P. Matteson, Jr., Wyoming Game and Fish Commission, Cheyenne, Wyoming, 1948. Bulletin No. 5. 84 pp. Illus. with photographs and sketches, paper-covered. Indexed. \$1.00.

The foreword, by Lester Bagley, State Game and Fish Commissioner, is a heartening example of the more tolerant attitude of many state game departments toward hawks. The endorsement of a publication on birds of prey by one of our state game commissions is in itself a laudable conservation achievement. Profusely illustrated, this attractive booklet gives descriptions of each bird and a highly readable account of feeding habits and general behavior. A classification table, key to genera, and key to species is followed by an introduction which pleads for a sensible attitude towards these birds. Contains a glossary, bibliography, and index to scientific names. An extraordinarily good publication of which the authors and the State of Wyoming may be justifiably proud.

BIRD DISPLAY AND BEHAVIOR

By Edward A. Armstrong, Oxford University Press, New York, 1947. 5 3/4 x 8 1/2 in., 431 pp. Illus. with sketches and photographs. Indexed. \$5.50.

In his preface to the first edition (1942) of this excellent and authoritative book, the author says, "An interesting observation of a bird's behavior should be no less carefully recorded and reverently preserved than the type specimen of a new subspecies." In this revised and enlarged edition, various discoveries and theories are given and opposing theories stated and documented, giving a broad summary of what is known and thought of a bird's actions in the bird's world. There are chapters on the psychological basis of nest-building, the functions of emotion in behavior, the dances of birds and men, dominance and territory, social hierarchy in bird life, and a host of other fascinating discussions of the psychology of birds. There is a list of scientific bird names, and 38 pages of bibliog-



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raphy through which one may pursue the general topic in detail.

INDIANA BIRDS

By Alden H. Bradley, *Indiana Dept. of Conservation, Indianapolis, Ind., 1948. 6 x 9 in., 55 pp., paper-covered pamphlet. 10¢.*

The author, a capable ornithologist and former representative of the National Audubon Society, has prepared a fine introduction to the more common birds of Indiana. The pamphlet contains a full-page biographical sketch and a black-and-white illustration for each of 48 birds. Bird-watching equipment, bird-feeding stations, and bird houses are briefly discussed and illustrated.

BIRDS OF THE CANADIAN BORDER STATES

By W. J. Breckenridge, *The President's Committee, Quetico-Superior Committee, 919 North Michigan Avenue, Chicago 11, Illinois, 1949. Illus. booklet. Free.*

Dr. Breckenridge, long-known for his studies and publications on the birds of Minnesota, has written an attractive and interesting booklet on the birds of the Quetico-Superior forest region of Minnesota and Ontario, a vast wilderness canoe country now threatened, on privately-owned areas, by commercial exploitation. In 1934, the President of the United States appointed, by executive order, a committee to help found a 10-million acre International Peace Memorial Forest in the Quetico-Superior country, in which certain areas were to remain "roadless" to preserve the primitive wildness of a country where one may still find moose, black bears, timber wolves, cougars, the Canada lynx, and other large or rare North American wild creatures. The President's Committee, the Quetico-Superior Council, the Izaak Walton League of America, and the Wilderness Society have fought a long battle against commercial interests which, in time, may destroy this wilderness preserve. One of the appeals for interest of the President's Committee has been the publication of leaflets telling of the wildlife values and the purpose of founding the Quetico-Superior forest. Dr. Breckenridge's contribution is a fascinating narrative of his experiences with wild ducks, loons, gulls, terns, hawks, eagles, woodpeckers, spruce partridges, and other interesting birds seen on his canoe trips to that beautiful forested region of lakes and connecting waterways. This booklet should have a wide distribution among schools, libraries and conservation groups, not only for its delightful accounts of birds, but to arouse strong American and Canadian sentiment for safeguarding one of our last great wilderness areas and its wildlife inhabitants.

BOOKS RECEIVED AT AUDUBON HOUSE

BRELAND, OSMOND P. *Animal facts and fallacies*, Harper, New York, 1948. \$3.00.

BRIDGES, WILLIAM. *Wild animals of the world, animal portraits*, by Mary Baker. Garden City Publishing Company, 1948. \$4.95.

BRONSON, WILFRID S. *Horns and antlers*, Harcourt Brace, New York, 1942.

CHEW, ARTHUR P. *Plowshares into swords; agriculture in the world war age*, Harper, New York, 1948. \$3.00.

CURTIS, MARY ISABEL. *Conservation in America*, Lyons and Carnahan, Chicago, 1947. \$1.16.

CURTIS, MARY ISABEL. *Our state birds*, Lyons and Carnahan, Chicago, 1947. \$1.20.

DALQUEST, WALTER W. *Mammals of Washington*, University of Kansas Publication, Museum of Natural History, Lawrence, 1948.

DAVID-BEAULIEU. *Les oiseaux du Tranninh*. Imprimerie d'Extreme-Orient, Hanoi (Université Indo-chinoise; publication de l'Ecole Supérieure des Sciences), 1944.

DE ONG, E. R. *Chemistry and uses of insecticides*, Reinhold, New York, 1948. \$6.00.

DICKEY, FLORENCE VAN VECHTEN. *Familiar birds of the Pacific Southwest; with size and color key*, Stanford University Press, 1948. \$3.75.

DIX, J. F. CH. edit. *Flowers in colour*, Oxford University Press, New York, 1948. \$10.00.

DUPOND, CH. *Les oiseaux de la Belgique*, Musée Royal d'Histoire Naturelle de Belgique, Bruxelles, 1943.

FAULKNER, EDWARD H. *A second look*, University of Oklahoma Press, Norman, 1947. \$2.00.

FENTON, CARROLL LANE. *Wild folk at the pond*, John Day, New York, 1948. \$2.00.

FOSTER, EDGAR E. *Rainfall and runoff*, Macmillan, New York, 1948. \$9.00.

FRIEDMANN, HERBERT. *The parasitic cuckoos of Africa*, Washington Academy of Sciences, Monograph No. 1, 1949. \$4.50.

FRYER, LEE. *The American farmer; his problems and his prospects*, Harper, New York, 1947. \$3.00.

FUNDERBURK, ROBERT STEELE. *The history of conservation education in the United States*, George Peabody College for Teachers, (Contribution to Education No. 392), Nashville, Tenn., 1948. \$2.00.

GILBERT, FRANK A. *Mineral nutrition of plants and animals*, University of Oklahoma Press, Norman, 1949. \$2.75.

GODFREY, ROBERT. *Bird-lore of the eastern Cape province*, Witwatersrand University Press, Johannesburg, 1941.

GOLDSCHMIDT, WALTER. *As you sow*, Harcourt Brace, New York, 1947. \$4.00.

GOULD, JOHN. *Tropical birds; with an introduction and notes on the plates*, by Sacheverell Sitwell, Batsford, New York, 1948. \$2.00.

GREENE, LEE S., BROWN, V. H. and IVERSON, E. A. *Rescued earth; a study of the public administration of natural resources in Tennessee*, University of Tennessee Press, Bureau of Public Administration, Knoxville, 1948. \$2.25.

GRISWOLD, A. WHITNEY. *Farming and democracy*, Harcourt Brace, New York, 1948. \$3.00.

HAUSMAN, LEON AUGUSTUS. *Bird hiking*, Rutgers University Press, New Brunswick, 1948. \$2.00.

HAWLEY, RALPH C. and STICKEL, PAUL W. *Forest protection*, John Wiley, New York, 1948. \$4.50.

JOHNSON, VANCE. *Heaven's tableland; the Dust Bowl story*, Farrar, New York, 1947. \$3.00.

KING, F. H. *Farmers of forty centuries; or permanent agriculture in China, Korea and Japan*, Organic Gardening Press, Emmaus, Penna. \$5.00.

KITTREDGE, JOSEPH. *Forest influences; the effects of woody vegetation on climate, water and soil, with applications to the conservation of water and the control of floods and erosion*, McGraw-Hill, New York, 1948. \$4.50.

KRUTCH, JOSEPH WOOD. *Henry David Thoreau*, Sloane, New York, 1948. \$3.50.

LANE, FERDINAND C. *Earth's grandest rivers*, Doubleday, Garden City, N. Y., 1949. \$3.50.

LOWDERMILK, WALTER CLAY. *Palestine, land of promise*, Harper, New York, 1944. \$2.50.

MASON, GEORGE F. *Animal sounds*, Morrow, New York, 1948. \$2.00.

MORRIS, PERCY A. *Boy's book of snakes; how to recognize and understand them*, Ronald Press, New York, 1948. \$3.00.

MURRAY, WALTER J. C. *Nature's undiscovered kingdom*, Allen and Unwin, London; Macmillan, New York, 1946. \$2.00.

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NEW YORK HERALD-TRIBUNE. *Report of the 17th annual Forum: Our imperiled resources, 1948.* \$2.25.

NOZEMAN, CORNELIS. *Sepp-Nozman Nedlandsche vogelen, 1770-1829*, L. J. C. Boucher, 's-Gravenhage, 1940.

PEATTIE, RODERICK, Edit. *The inverted mountains: Canyons of the West*, Vanguard Press, New York, 1948. \$5.00.

PHILIPS, ALFRED W. *The value of soil conservation*, University Publishing Company, Lincoln, Nebraska, 1949. 84¢.

RANSOME, ARTHUR. *Great Northern?* Macmillan, New York, 1948. \$3.00.

RICE, MABEL AGNES. *Trees and shrubs of Nantucket; descriptions, identification keys, list of trees and shrubs*, Maria Mitchell Association, Nantucket, Mass., 1946.

RODALE, J. E. *Stone mulching in the garden*, Rodale Press, Emmaus, Penna., 1949. \$3.00.

ROMANOFF, ALEXIS LAWRENCE, and ROMANOFF, A. J. *The avian egg*, Wiley, New York, 1949. \$14.00.

SALTEN, FELIX, Edit. *Favorite animal stories*, Messner, New York, 1948. \$3.00.

SANDARS, EDMUND. *A bird book for the pocket*, Oxford University Press, New York, 1947. \$4.50.

SITWELL, SACHEVERELL. *The hunters and the hunted*, Macmillan, New York, 1947. \$4.00.

STANEK, V. J. S *Kamerou za zveri na nasich vodach*, Tiskem a Nakladem Ceske Graficke Unie A. S., Prague.

STEVENS, WILLIAM CHASE. *Kansas wild flowers*, University of Kansas Press, Lawrence, 1948. \$7.50.

STORER, JOHN H. *The flight of birds analyzed through slow-motion photography*, Cranbrook Institute of Science Bulletin No. 28, Bloomfield Hills, Mich., 1948. \$2.50.

STUART, FRANK S. *City of the bees*, Whittlesey House, New York, 1949. \$3.00.

VALE, ROBERT B. *How to hunt American game; a grass-roots guide to American hunting*. Illustrated by George M. Sutton, Military Service Publishing Co., Harrisburg, Pa., 1946. \$4.00.

VERRILL, A. HYATT. *Strange prehistoric animals and their stories*, Page, Boston, 1948. \$3.75.

WILLIAMS, HENRY LIONEL. *Stories in rocks*, Holt, New York, 1948. \$3.00.

PAMPHLETS

RODECK, HUGO G.

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November 1948

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FIFTIETH

Happy Birthday

When did our magazine come into YOUR life? What do you think of its past and future? Send in your comments to be published in this column.

ANNIVERSARY

The Fiftieth Anniversary issue of *Audubon Magazine* reminds me that my own set of this periodical began originally in the second year of issue of *Bird-Lore*, the former title of your publication. As a small boy in southern Wisconsin, birds were to me an ever absorbing interest from my earliest remembrance. It never occurred to me that grown-ups paid attention to our feathered friends except on hunting expeditions, or in the case of canaries and other birds kept in captivity. In some way my mother learned of *Bird-Lore*, and as a Christmas present gave me a subscription to the second volume. This was so definitely intriguing to me and so filled with interest that one way or another I managed to scrape up a dollar of my own money, a large sum I can assure you, and with this purchased Volume 1, so that my set became complete, and complete it remains to the present day.

My first contribution to "science" was a two-page note on my experience with a red-headed woodpecker written when I was 13 years of age and printed under the kindly eye of Dr. Frank M. Chapman, written I may add surreptitiously under



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the sterner eye of a teacher when I was presumably at work on a "composition." This was a most important event! I was happy in later years to meet Dr. Chapman, and finally to count him among my friends. I may say definitely that *Bird-Lore* and Dr. Chapman had much to do in broadening my ornithological horizons, and in promoting my earlier

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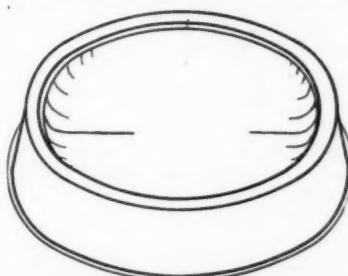
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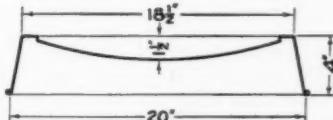
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studies in the field that has been my scientific work throughout my life.

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ALEXANDER WETMORE

Smithsonian Institution
Washington, D. C.

Just a word of congratulations on your January-February number. I think it is the best I have seen.

I am particularly impressed with Mr. Emblen's almost-poem on ecology, and Alan Devoe on understanding animals. The color prints are also very fine.

GAYER G. DOMINICK

New York City, N. Y.

Let me express my deep appreciation for this anniversary number of the *Audubon Magazine*. The poem by Don Emblen I would like to place in the hands of all the self-styled Atheists, as well as all the preachers of the gospel in the country. Many are with him, "poised and eager—waiting the hawk-rush of a primal truth"—let us have more from Don Emblen.

The other articles by Alexander Skutch, Edwin Way Teale, and Alan Devoe, are things I want to pass on to all the special people who will understand, as well as those who might possibly be enlightened. Let me mention also "Thus They Shall Perish," by Louise de Kiriline. Her point is so beautifully expressed and it clears a lot of thinking about life and death.

Congratulations! And may you grow in grace in the years to come as you have in the first fifty!

MRS. RUSSELL W. TODD

Bronxville, New York

Your Audubon Jubilee issue was extremely artistic, a fine display without being overdone; it had substance, literary value, a well-balanced variety of subject-matter. One wants to take it in hand, not once, but many times, turn over the pages slowly, look at them and re-read them. Skutch's and Devoe's articles, as always, speak for themselves and Don Emblen's contribution was a find. Knowing there are men with minds reacting so finely makes one despair less of the "sands running out" irreversibly.

LOUISE DE KIRILINE LAWRENCE
Rutherford, Ontario

I might say that we look forward to receiving our copy of your *Audubon Magazine* and would like to particularly compliment you on the colored plates of birds on the center section.

E. L. PAYNTER
Game Commissioner

Regina, Saskatchewan

I did not renew my subscription to *Audubon Magazine* for 1949 because I thought I could not afford to. Now I find that I cannot afford *not* to have it, so enclose check for one year's subscription.

Mrs. F. D. BAKER

Detroit Lakes, Minn.

A friend of mine passed to me this morning his copy of the January-February Anniversary issue of *Audubon Magazine*.

I have gone through this copy very hurriedly but have found enough things of interest to know that I would like to become a member of your organization. Please find check enclosed.

J. P. BARRETT

Ponca City, Oklahoma

The *Audubon Magazine* is the most refreshing magazine that comes to my house. It is like going into another world, not to have to consider political questions of this anxious world. When I finish the magazine I pass it on to a young couple. From them it starts on a round of other readers who are interested but have little money.

AGNES L. WILLISTON

Carmel, California

Continued from page 101

thing you can say about a male grebe is that he is a good sport and father, helping bring up the children and shaking his head."

Crashed Through Window

A bald eagle made the news in New York metropolitan dailies when it crashed through a window of the United Nations General Assembly building at Flushing Meadows, Queens.

Bald Eagle
photographed by
Allan D.
Cruickshank



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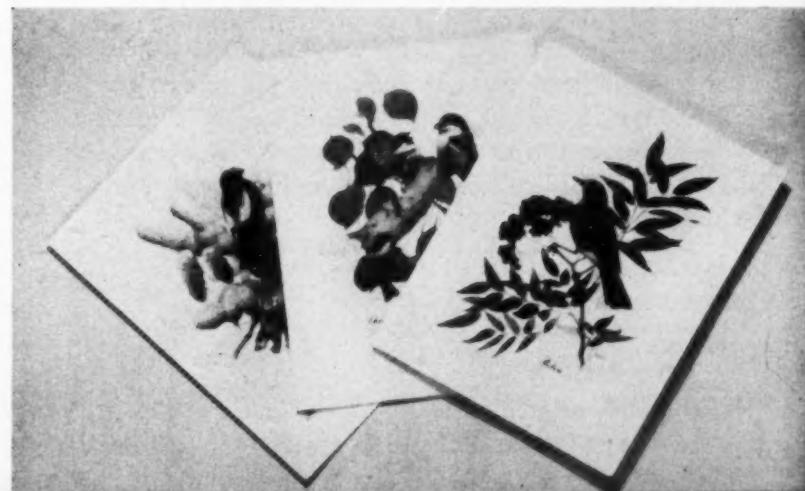
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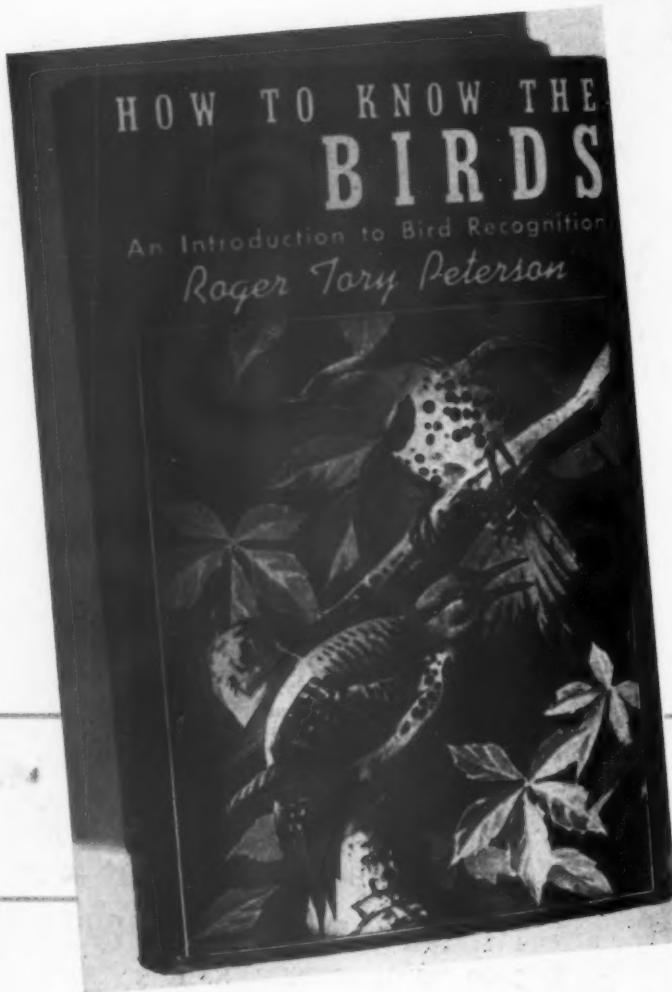
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